

Study on:

"The Production and Distribution of School Books in Yemen"

- o Planning and Development of Textbooks in the Ministry of Education**
- o Production and Distribution of Textbooks in the General Corporation of School Book Printing Presses**



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Authors of the study on behalf of the GTZ Sanaa :

Dr. Hamied Al Iriani
Dr. Mohamed Omer Ba-Saleem
Herbert Schabmair (Teamleader)
Dr.Jürgen A.Schmidt

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Executive summary - foreword :

According to the "National Strategy For Development Of Basic Education In The Republic Of Yemen 2003 - 2015" Yemen aims to achieve education of good quality for all children by 2015.

An important element in this respect is the timely supply of textbooks of good quality and in sufficient quantity.

The Ministry of Education is aware that the general public as well as the teachers, school directors and supervisors are not satisfied with the current situation.

Complaints refer to delays in the delivery of books, poor quality, and insufficient quantity.

The Ministry of Education has identified technical and managerial problems in the printing presses, and has asked the office of the "Basic Education Improvement Programme" for assistance to improve the situation.

The GTZ has asked two teams, each consisting of one international and one national expert, to evaluate the existing situation and to work out recommendations how the existing problems could be improved.

This describes the central objective and challenge of this study.

The study is divided into **two parts**:

While in **Part A of the study** the quality aspect concerning the content and design of textbooks and teacher manuals are described, in **part B** the main aspects are the quality and quantitative aspects of textbook printing and distribution

In both parts, the current situation are analysed and effective and realistic measures for improvement - short- term, medium- term and long -term - are recommended.

Executive summary for part A :**Planning and Development of Textbooks in the Ministry of Education**

Actually, the Ministry of Education faces three strategic challenges in the area of schoolbook development:

Curriculum renovation

The MoE has decided to start the process of renovating the actual curricula. This activity starts in October 2007 and will result in a change of about 20% of the current curricula. Part of this is the intended introduction of English as a foreign language (and probably computer science) from Grade 4 which influences the other curricula in terms of allocation of lesson hours in Grades 4 - 6.

New Textbooks development

For implementing the New Curricula, new textbooks and teacher manuals need to be developed for all the subjects. It is obvious that a 20 % change - in methodology, in content or in timetable (lesson hours per week) - leads to new textbooks. It is in most cases not sufficient to just change parts of the current books.

Schoolbook improvement

The current schoolbooks need to be improved and half year titles must be integrated into one book. This is an important task despite upcoming new products as it will take a couple of years until new books are available for all the subjects in all grades.

Based on European publishing experiences and the observations about the organization and the work process during the last curriculum review and implementation phase in 2000 - 2004 the following critical results can be described:

- *No clearly defined responsibility*

There were too many players involved in the complex process of developing schoolbooks, which might lead to coordination problems and time pressure.

- *No longer term planning for distributing workload over periods of time*

It seems that there was no concrete longer term planning or scheduling of developing dozens of schoolbooks. Individual book development was not coordinated with other books to be developed at the same time nor with the personnel situation, nor with workplaces and available tools (and also not with the printing capacities). Result was that actual workload varied tremendously from no work at a certain period up to nearly day-and-night work in other periods.

- *Unrealistic product development time planning*

Concrete development of manuscripts was (not only, but also) dependent on the date of budget allocation by the MoE finance department that often was delayed, while the publishing date was already fixed. So manuscript writing and the DTP process was unnecessarily compressed.

- *No regular budgets*

Recurrent budgets for day-to-day expenses did not exist. Investments for computers etc. needed extra allocation of money. This impedes the improvement of the actual books, the correction of errors and the editorial work that should be done in order to integrate the two half year books.

- *Lack of permanent and trained personnel*

Permanent staff was not used due to the budget regulations, people are seconded from other MoE departments. It is obvious that untrained employees are hardly able to do quality work.

- *Not enough space, equipment and tools*

There is a lack of rooms and equipment, which prevents effective work. A content management system was not available.

Global recommendations

The global recommendations give an overview about the strategic activities and principles that should be implemented in due time. The consultant is aware of the fact that these proposals are visionary because they lead to a serious change of the current Schoolbook Policy of the MoE with regard to the preprint development work processes.

- ***Change organization structures***

Two different bodies are sufficient to handle the publishing process:

- the governmental Curriculum Sector with the responsibility for developing policy and curricula including timetables and syllabuses according to political, societal and scientific conditions and requirements and to approve and certify the final manuscripts.
- the School Publishing Unit in the MoE with the responsibility for organizing and executing the whole process of publishing: the overall and yearly publishing plan, the workflow, and the use of permanent budgets.

It is not possible to implement this without the political will of the government, and in any case this can only be done as an ongoing process during the next few years.

- ***Operate like publishers worldwide***

- *Introduce five year planning phases, renewed year by year.*

This is an absolute must in order to allow realistic and even manpower, resources and budget allocation over long periods of time.

- *List and clarify responsibilities.*

Responsibilities of acting organizations and people need to be described as well as their duties and rights. A "Publishing Director" needs to be appointed, equipped with overall responsibility and decision power.

- *Introduce project management structures*

This is a major condition for a planned, straightforward and controlled work process.

- *allocate budgets*

It is essential that the operating units get a permanent budget including recurrent costs budget.

- *buying of external/international services*

To buy licenses is often much cheaper than developing your own materials, particularly for science education or in higher secondary subjects

- **Prioritize publishing plan**

Updating curricula and subsequent development of dozens of new schoolbooks including teacher manuals makes it necessary to prioritize activities. It is more important to update main subjects like Arabic and Maths than others. Furthermore, errors in current books for secondary grades are probably of minor relevance than in low grades.

- **Organize work independently from school year and grade**

There is no sensible argument that says that all subjects need to be renewed at the same time or for the same school year! This was the case during the 2000 - 2004 publishing period. We strongly recommend altering this process in order to reduce the accumulation of high workload at a certain time and distribute workload over longer periods. Main arguments are:

- students that get a new book in year 2008 don't need the following book until one year later
- students that started with an "old" book can continue with familiar methodology when using the (improved) next book
- the same authors, editorial and DTP people can work subsequently on successive titles which can lead to quality improvement and better scheduling.

- **Employ permanent personnel and train them**

A basic condition of performing quality work is qualified personnel. Selection and training of staff must be done before the main workload starts, which is probably in early 2008 when the first new books need to be developed according to the new curricula.

Action recommendations (for short and longer term actions)

RECOMMENDATION 1: Let the Curriculum Department become active!

Start to organize CurrDept as an editorial office. Most importantly is the formal integration of the former Book Layout Dept. into the CurrDept. and the formal assignment of a (at least intermediate) Publishing Director with the authority for planning and executing this start-up phase. In charge: MoE

RECOMMENDATION 2: Verify improvement of current textbooks!

Simultaneously, under the responsibility of the ERDC and the CurrDept., we recommend

- to organize the collection of errors in those current editions that need revision first. In charge: ERDC.
- to start improving current titles successively. In charge: CurrDept.
- to integrate half year titles into one book as a major task with a huge potential to save money. In charge: CurrDept.

RECOMMENDATION 3: Install a Planning Committee!

Very urgently, we recommend that the MoE installs a Planning Committee. Their task is to define and develop a draft **overall five year plan** concerning schedules, resources, man power, investments and budgets of the three strategic challenges: curriculum review, new textbooks development, improvement of actual titles.

This draft five year plan can build the basis for all future activities and allow the official bodies (MoE, Finance Ministry, other involved governmental institutions and donors) to decide about schoolbook policy change and the organizational and financial consequences.

RECOMMENDATION 4: Reorganize the editorial workflow!

It is strongly recommended to improve the editorial development process by starting to reorganize the workflow. See §7.5 for details.

RECOMMENDATION 5: Improve author involvement!

Services must help authors to do their tasks in an optimal and time controlled way. Therefore we recommend

- to train new authors by asking them to write one unit of the intended schoolbook for trial
- to develop author guidelines, which contain all the relevant information about the formal conditions of their work, the schedules, the responsibilities and tasks
- to develop templates for layouts of units of the schoolbook that allow the authors to efficiently write their manuscripts in the right predefined length, structure and order
- to provide authors with means (computers, online access) which improve the effectiveness and cooperation

RECOMMENDATION 6: Become more commercial!

Looking at the longer perspective it is recommended that the MoE politically set the prerequisite for a less monopolistic but more commercial-oriented future of the schoolbook publishing policy by installing a School Publishing Unit (SPU) within the ERDC, probably with the integrated CurrDept/Book Layout Dept. as the editorial department.

Proposal for the implementation of the recommendations

“It is the responsibility of the MoE (not the ERDC) to improve or change the working situation of the CurrDept in terms of responsibilities, workload, employees, regular budgets, etc.” said Mr. Al-Jendari, Under Secretary of Project & Equipment Sector.

Moreover, a general policy decision by the MoE is needed to reduce the involvement of the various committees in the pre-print publishing process and to reorganize this process more efficiently in order to improve the pedagogical quality of the schoolbooks for the sake of the society in general and the teachers and children in particular.

Under the condition that the MoE is preparing this policy change it is highly recommended that this process is seconded by a long term expert, probably a European senior schoolbook publishing professional. The expert should start as soon as possible, definitely before the start of the development phase when the new textbooks need to be developed according to the new curricula. A minimum duration of his stay is two years.

Executive summary for part B :**The Production and Distribution of Textbooks in the General Corporation of Schoolbook Printing Presses (GC)**

The project Schoolbooks in Yemen is having a very difficult time. The books are often delivered late; the delivered quantity is often not sufficient and the produced quality is poor.

In part B of this study, we analyse the reasons for these problems in the sector „Production and Distribution“ and attempt to find measures that can solve these problems.

Almost all machines in both printing presses in Aden-Manssoura and Sanaa are in a bad or very bad state. Some machines are out of order. The output per hour reaches partly only 50% of the normal performance. The production quality is very low.

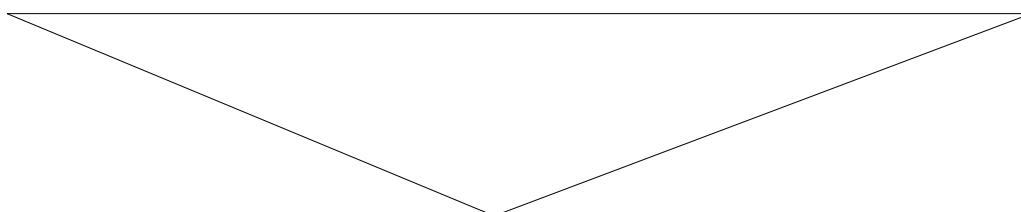
The reasons for this are varied.

The fact is that the machines are not properly maintained and do not receive the necessary repairs. Further, there is no doubt that the feeling for quality printing is missing. This begins at the management level and continues on down to the workers operating the machines.

It is recommended that the machines be immediately repaired and that the staff be trained for the maintenance and operation of the machines, so that the situation does not become worse. Today, we can already foresee that less than 50% of the required books will be available for the start of the 2007/2008 school year.

It was often said, that the GC does not receive enough money to make the required repairs and to purchase spare parts.

But the results of the situation analysis prove that there are some relevant matters that could help to save the necessary funds to buy the spare parts and make the repairs possible.



The details for this are the following:

- o **The budget orientated financing of the GC and its printing presses presents the risk that important factors such as costs and performance are not sufficiently taken into account.**

The objective of the GC, founded 25 years ago, was to produce and deliver schoolbooks for the Ministry of Education as a self-dependent company competing with private printing presses. The financing was to take place according to the produced and delivered books = order orientated financing.

The advantage of this concept is that the GC should prove its competitive position in comparison with other printing presses, that it can produce books for a low price and at low costs.

This concept has not been followed. However, it should be reconsidered for the benefit of a preferably low-cost schoolbook production and introduced as far as possible.

- o **There are no sufficient business management instruments available to control the costs of the GC and of the individual printing presses in relationship to the delivered schoolbooks.**

For example, there is no control of the quantity of waste paper used and no control of the amount of paper that ends as misprinted sheets.

Annually, paper for approx. US \$ 12 Mio is purchased, the potential savings should be at least US \$ 500 000.- - 600 000.- per year. It could probably be even higher.

Furthermore, there is no detailed information available about relevant cost drivers such as transportation costs caused by the book delivery to the Governorates, total costs for the GC administration and so on.

We urgently recommend the installation of controlling instruments and to work out regular operating figures so that such problems become apparent and unnecessary costs can be avoided.

- o **The usual delivery of most of the paper from Hodeida to the GC Headquarter in Sanaa and from there on to the printing presses in Aden and Mukalla, causes unnecessary costs for transportation.**

+

Due to the production method of printing the complete run of each book at one printing press and then distributing these books to the whole country, also causes unnecessary costs for transportation.

In reality, the paper is delivered from Hodeida to Sanaa, then from Sanaa to Aden, then the printed books return to Sanaas Governorate.

It is recommended to **decentralise** the material supply as well as the book production and delivery, which means:

- the transportation of materials should take place from the harbours in Mukalla and Aden directly to each printing press.
- the printing press should only print the books that are needed in its region,

= Decentralisation project

In addition to the cost savings for transportation, this would simplify the entire system of schoolbook production and distribution. Each printing press would keep close contact with its "customers" and performance comparisons between the printing presses would be possible.

In case of delays and poor quality, the GC headquarter would not be held responsible anymore, the printing press managers himself would have the responsibility.

Unfortunately, there is also no information available about the total transportation costs for the GC. The estimated potential savings amount to approx. US \$ 300.000 - 550.000.- per year.

o The personnel costs represent a further potential for saving money.

By reconditioning the production equipment, printing machines performance can be increased by approx. 50% and for the binding equipment by approx. 100%. In this case, the third shift would not be necessary.

In addition to the personnel cost savings, this could guarantee that only well-trained and experienced employees operate the machines and that there is enough time for machine maintenance.

At least 10% - 20% of the staff working in all printing presses and at the GC administration could be reduced. It is recommended to stop hiring.

Considering the present number of workers, this means about 80 – 150 employees, this would save approx. US \$ 300 000.- - 500 000.- per year.

Furthermore, the Aden-Mualla printing press offers a very high saving potential. It makes no sense to pay US \$ 800 000.- per year for wages without receiving the corresponding production of books. Please see remarks at the end of this summary.

In order to bring the printing presses back to a condition in which they are able to produce the schoolbooks needed in the required quantity, at the correct time and in good quality, and to enable the GC and the individual printing presses to solve their problems themselves, the following objectives are recommended.

o Project A : Production increase and stabilisation

- time period: short term
- completion should take place within approx. 18 months

Objectives:

- secure the existing production capacity for approx. 5 years
- increase the existing GC production by approx. 40 % - 60 %
- increase the existing production quality by approx. 100 %
- realization of a GC annual saving potential of approx. 1,0 Mio - 2 Mio €

Measures:

- **Acquire expert's reports for all machines** in Aden and Sanaa, in order to assess the need for repairs. **Order and shipment of spareparts and execution of the required repairs.**

Objective:

Increase production performance by approx. 50 – 100 %

Remark: possible improvement of the situation within 3 months after starting the measures

- **Complete detailed study "Decentralization"** to enable the advantages of a decentralization of production and distribution of the schoolbooks

Objective: Save costs to have money for repairs and new investments + simplify the entire system of schoolbook production and distribution

- **Work out and introduce sufficient controlling instruments to be able to work out cost- and operation- figures**

Objective:

Save costs to have money for repairs and new investments.

- **Organize staff training for machine operators and for the technical management**, to improve the operating and the maintenance of the machines as well as the preparation and the control of the printing orders.
Objective:
Increase of the production performance and product quality + improve operating and maintenance of the machines and equipment.

 - **Introduction of a planning method** at the Ministry of Education to assure that at the start of the new school year (= September) the required quantities of schoolbooks for the following school year are known with an accuracy of 80 % and the corresponding print order is placed.
Objective:
Better planning for the printing presses which means a production increase and consequently an improved schoolbook supply to the schools.

 - **Nomination of a "Project Leader Schoolbooks"**, who checks the present supply of books to the school and what amounts they really need and then informs the MoE of problems in time.
Objective:
On time information about insufficient supplies, so that the necessary measures can be taken.
- o Project B : Restructuring of the GC and the printing presses"**
- sustainable project
 - time periode : medium term
 - completion should take place within approx. 24 months
- Objective:**
- secure the production capacity for approx.10 years
- Measures:**
- **Realisation of the decentralization project.**
Objective:
Fast application of the advantages of this concept.

 - **Adapt the production capacity of the different printing presses according to the results of the decentralisation study.**
Objective:
Advantages of the decentralisation project should be realised as much as possible.

- **Check the legal possibilities that the employees of the GC are paid** according to the quantity of produced books and not according to budgets = order orientated financing.

Objective:

The GC and its printing presses management should benefit from an incentive system taking into account the cost and performance factors

o **Project C : "Move towards privatisation"**

- sustainable Project
- time periode - long term
- completion should take place within approx. 48 months

Objective:

- Prepare and analyse the privatisation possibilities for the textbook supply

Measures:

- **Definition of possible alternatives to improve the present problems of the schoolbook supply monopoly.** In case of late deliveries, there are officially no possibilities to purchase books elsewhere as from the GC and the Ministry of Education. Even if the parents are willing to buy them themselves.

Objective:

Improvement of the schoolbooks supply to the schools and pupils.

- **Training of printing experts at the Ministry of Education**, to give them the specialised knowledge to be able to tender and to purchase part of the text book production in the private printing industry.

Objective:

Reduce the monopoly situation of the GC.

- **Organize price offers from the private printing industry** and compare these with the production costs of the different GC printing presses.

Objective:

Check, if the GC printing presses are competitive in comparison to the printing presses in the private industry. Take measures if the GC is not competitive !

o **The Aden-Mualla printing press represents a very particular problem.**

This printing press was founded in 1950 and in 2004 was integrated into the GC by ministerial decision. It presently employs 150 persons with wage costs amounting to approx. US \$ 80 000.- monthly.

The GC has not succeeded in integrating this printing press and in investing in new machines so that can bring a substantial contribution to the schoolbook production.

The reasons for this are the following:

- most machines are out of order or in very poor condition
- the printing press has no own budget
- **no general decision has yet been made, what should happen with this printing press**

Concerning the expert knowledge of the management and its staff, no statement could be made during our single visit.

The fact is that the printing press is in poor condition, even when it is not producing. The condition of the stocking and production buildings is poor. Many old damaged machines clutter the buildings as well as many damaged paper rolls. There is great disorder

It does not make sense to pay US \$ 1 Mio annually for wages and to receive almost no production for these expenses. A decision has to be made here. There are four alternatives described and evaluated in detail in item 3.4.

They range from closing the printing press with the problem of employees losing their income, and reorganising and integrating the printing press into the GC production planning, incl. new investments.

The decision should depend on the results of the decentralisation study. Should this concept be realised – which is recommended – the Aden location certainly has to be modified.

In this case, it would be possible to involve the partly well-trained employees and to use the large Aden-Mualla printing press warehouse and production areas. Some machines could be repaired for additional production capacities.

But it should be noted that no production corresponding to the number of employees can be realised without the corresponding machine investment and the corresponding reorganisation consulting.

Part A:

Evaluation results of the situation analysis and recommendations for improvements concerning:

Planning and Development of Textbooks in the Ministry of Education (MoE)

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1 Introduction

“Yemen aims to achieve education of good quality for all children by 2015. An important element in this respect is the timely supply of textbooks of good quality and in sufficient quantity”.

This quote from the Terms of Reference (ToR) describes the central objective - and challenge - of the following study. While in the next part of the study the quality and quantitative aspects of printing and distribution are described, the main issue of this part is the quality aspect concerning the content and design of textbooks and teacher manuals.

Critical findings of the “National Strategy For Development Of Basic Education In The Republic Of Yemen 2003 - 2015”, where e.g. “the unsuitability of the content to pupils’ ages and the presence of many typographical and linguistic errors” (p. 49) is mentioned are one of the sources that describe the necessity of improvement of the current situation. A number of other documents e.g. the “MoE Detailed Annual Work Plan for 2007” or the “BEDP Workplan for 2007” show the need and describe planning activities for executing improvements in curriculum and textbook development. The study “A review of curriculum and textbook activities...” by Andy Smart (June 2005) gives a number of sound recommendations for the process of Curriculum Review and materials development.

Despite these clear directions, observations and recommendations it is obvious that such activities - even if they took place - were not yet visible in terms of concrete results or realistic planning activities.

Based on such experience, the “Basic Education Improvement Programme (BEIP)” tries to help the MoE by involving experts in order to analyze the weaknesses of the current situation and to recommend sensible, effective and realistic measures for improvement - both short and longer term. The German expert in charge of the textbook publishing process is Dr. Juergen A. Schmidt, supported by Prof. Dr. Mohamed Omer Ba-Saleem from Aden, who jointly visited the Vice-Minister and other responsible people from the Ministry of Education during their visit in Sanaa from 18th May to 23rd May 2007.

2 Requirements for textbook quality

A textbook is of high quality if it is *pedagogically sensible*, that is

- it follows a clear subject oriented structure (e.g. chapters, units)
- it follows a clear learning and teaching method (e.g. explanation texts, examples, exercises, tests)
- language and content is adopted to the learners age and abilities, not only concerning content but also concerning usability (e.g. workbook, reference book), format, colors, etc.
- all the learning units are structured so that they can be taught in a predefined time (e.g. in 1 lesson hour)
- the whole learning content in the book can be taught within the school year, so the number of units is dependent on the number of weekly lessons of the subject: main subjects like Arabic or Maths are taught much more frequently than e.g. Geography
- the learning content is without errors regarding the subject
- it encourages the learner to use it for learning (e.g. as a workbook, for self-assessment, in preparation for tests, ...)
- it provides guidelines to the teachers (probably enhanced by an extra teachers guide)

and - of course - if

- it is free of language or typing errors
- it is technically (printing, binding) of a high standard
- it is well designed (attractive cover design, friendly layout, colorful, size, ...)
- it is available in time

3 The European experience - structures and methods for the provision of schools with schoolbooks

In Europe the publishing industry, including educational publishers, as well as the printing industry are independent commercial companies which do not have any monopolist status in their country and are competing for best solutions in their markets. In other words:

Educational publishers are developing schoolbooks (and a number of additional learning and teaching materials) *at their own risk* for specific market segments (school levels, subjects, type of product) in their country. In order to be commercially successful, competition between the various publishers involves trying to develop "the best" product, best in terms of pedagogical, technical and design quality.

Examples of publishers:

- in France three big schoolbook publishers (*Hachette, Hatier, Nathan/Clé*) and some thirty smaller ones compete to sell their textbooks
- in Germany there are four big publishers (*Klett, Cornelsen, Westermann, Schroedel*) and about 20 medium- sized ones. Altogether there are 74 publishers listed in the list of German schoolbook publishers.
- The Netherlands is a country with about half as many school children as in Yemen. But they have a very big private publisher (*Wolters-Kluwer*) and more than 20 smaller publishers that (besides other publishing activities) offer schoolbooks.

Printing order

The publisher decides about the number of copies to be printed, the decision is particularly based on the calculation of potential sales numbers, developing costs, price per copy, publishers' sales prize. Firm's policy might also influence the number of copies at first print run or reprint, like the handling of deprecation costs for stock, suppliers' conditions, etc. Printing orders are negotiated with a couple of private printing companies, so there is a prize and quality competition between the printing firms.

Distribution of schoolbooks

Distribution of the schoolbooks is a totally private business. A typical distribution chain involves the following parties:

- suppliers, selected by the publisher, store the printed editions
- either wholesalers, bookshop chains or individual bookshops order the textbooks from the suppliers according to the amount needed by the (local or regional) schools
- schools then receive the ordered books directly by post or by other means from the supplier or wholesaler.

These services are of course not for free. Publishers pay for it, in most countries by paying so-called resellers discounts of up to 50% of the net sales prize (without VAT) of the book.

Example of book prize elements (Germany):

Sales prize:	20,00 EUR
VAT 7 %	<u>1,31 EUR</u>
net sales prize (without VAT):	18,69 EUR
discount e.g.25%	<u>4,67 EUR</u>
publishers sales prize:	14,02 EUR

The publisher receives this amount and pays out of it to external firms:

- suppliers costs
- printing costs
- authors costs
- copyright fees
- and further costs and fees.

The rest has to cover the publisher's internal activities, particularly the salaries of the employees and also the profit of the company

Textbook selection

Schools (individual or regional) decide on the basis of the various publishers' offers about the textbooks in a specific subject that they want to work with. For different subjects books from different publishers might be used. Once a decision for a publisher's product is made it is binding for several years because textbooks of different publishers follow different methods and the schools are forced to use the same series of books for the successive years.

Example (Germany):

- Decision by school board made in May 2004 for Klett Maths Grade 5
- introduction at school in Grade 5 in Sept. 04
- subsequently introduction needed of Klett Maths Grade 6 in Sept. 05
- next year in Sept. 06 Grade 7, etc.

The decision of which publisher's products to use is taken by a board of teachers and head teachers of the school or region, sometimes parents are also involved. Criteria are certification from the Ministry (see below) and pedagogical quality.

Orders for the books that are needed for the next school year are placed by the head teachers (or dedicated teachers/administrators) in late spring every year, books are then delivered at the latest before August/September, when the next school year starts. The number of copies needed is calculated in detail by the schools according to the number of students per grade and subject.

Free provision of textbooks

In many European countries the provision of textbooks - at least the main ones - to the children is free for the parents - it is fully paid by school, local or regional bodies, which get their budgets from the governments. In such cases, textbooks are loaned to the children; they have to give them back at the end of the school year. In the case of primary workbooks, up to grade 3 or 4 where children must write in the book, new books are provided to the children every year.

If parents do not want their children to learn with used books - they can be used for up to 6 years - then they might buy them privately at any bookshop.

In other countries parents have to pay for the textbooks themselves. In such cases often the school organizes the joint order, as described above, and charges every student directly. Parents might get refunding from the government according to need. Additionally, schools or students themselves might organize second hand sales for the textbooks.

Role of government

Though the governments - mostly Ministries of Education or related institutions - are of course the central bodies for the definition and control of the political interests and school policy of the country, they do not directly influence the process of schoolbook production and provision as described above.

But they set the rules and conditions: they set the overall curriculum including subject syllabuses, which are developed by teachers and pedagogic specialists, often after consultation and involvement of private publishers. Renewing curricula normally takes place only after longer periods of usage and is in most cases not grade oriented but subject oriented: new curricula not for all grade x subjects, but successively for all grades in 1 subject, e.g. Maths.

Publishers have to respect the official curricula when developing manuscripts. But pedagogy- based interpretation and variation of methodology and order of content allow the development of quite different textbooks that follow the same curriculum. Because of this, the publishers need to apply for approval of their books before they are allowed to be offered to the school market. This certification or approval process is another role of the responsible governmental body.

Organizational structure of schoolbook publishers

In order to be able to organize the process for the development of high quality textbooks, most educational publishers in Europe and elsewhere work along the following basic organizational scheme:

- the publishers' editorial departments work independently and employ all persons involved (editors, DTP typesetters and layouters, designers, production staff, administrative staff)
- a separate editorial office is responsible per subject or area (e.g. lower primary schools)
- one "chief editor (CE)" plans and organizes the whole development and pre-print process per subject or area
- the CE is the responsible person for the pedagogical quality of the titles
- the CE selects the authors and supervises their work (the CE might be one of the authors, in this case an internal counterpart takes on some of the roles, e.g. the following:)
- the CE supervises the work of all other persons involved: subject editors, typesetters, layouters, graphic designers, production staff, administrative staff

A Publishing Director, together with the CEs, prepares and manages the five (or more) year overall publishing plan for all the books and developments and is responsible for the global schedules and quality of the products and for the commercial success..

Commercial publishers are dependent on market success; therefore the Marketing Director and marketing managers also play an important role and cooperate with the Publishing Director and the CEs, particularly concerning the design of books and contents. Furthermore, financial measures are important. Concrete budgets drawn up by internal finance controllers are dedicated to the editorial department and allocated to each title. Finally, the personnel department, technical and IT department take care of related services.

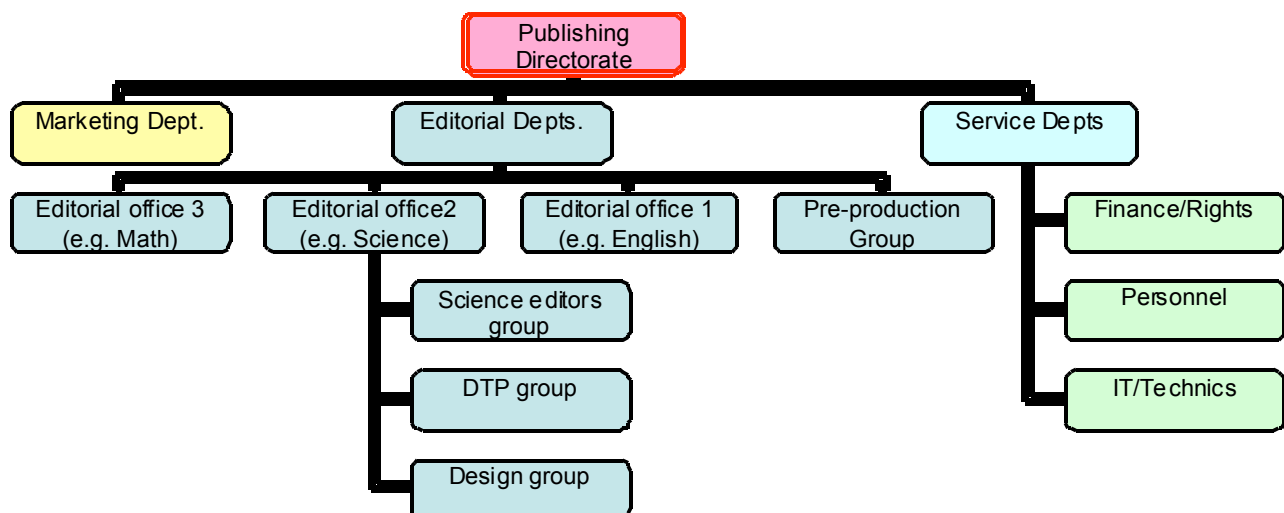


Fig. 1: Organization structure of a typical schoolbook publisher

4 Comparison preprint - workflow organization Yemen - Europe

In the years 2000 to 2004 new textbooks were developed by the Curriculum Department of the ERDC. The workflow was defined as shown in the diagram in Fig. 2. Comparison with a "traditional" European workflow (Fig. 3) shows immediately that the influence of governmental institutions in Yemen is more direct than in Europe and that storage and improvement processes for reprint are missing in the chart

Fig 2: Yemen work process organization

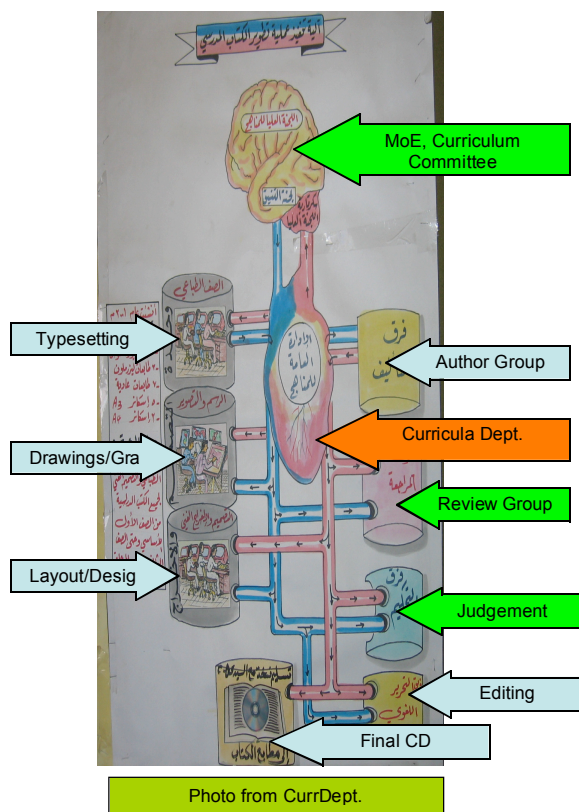
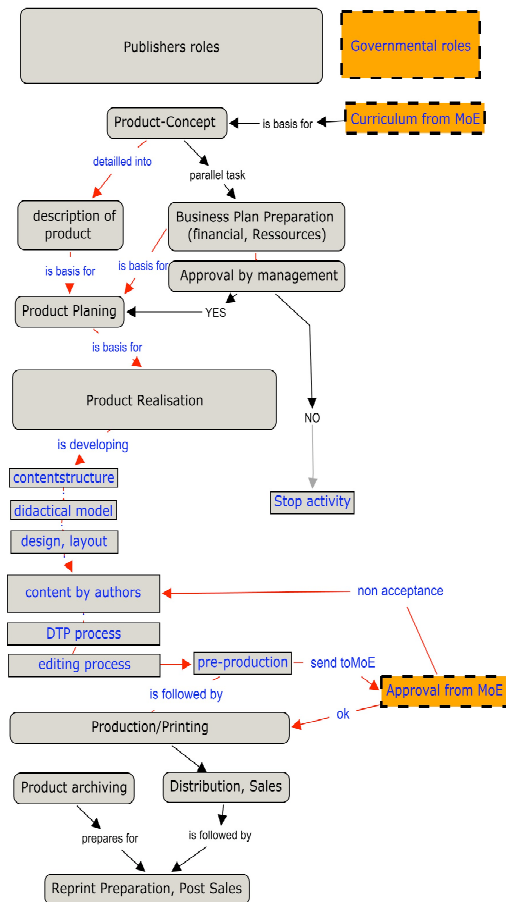


Fig 3: Typical publishing work process



5 Observations concerning the Yemen textbook development workflow

The current curriculum in use was published in 1999. It was developed by Curriculum Boards. On the basis of these curricula, ERDC's "Curriculum Department (CurrDept)" was in charge of developing and producing textbooks and accompanying teacher manuals up to the final product - CDROMs, which was then delivered to the GCSBPP (General cooperation for the school book printing presses). It has been in operation since the year 2000 after the first "new" curricula were developed and introduced. Up to July 2004, a total of 107 books with 24.000 pages had been produced. Since then hardly any regular employee (except the Director and some administrative staff) has been employed in the CurrDept, and the department has no one in charge for typesetting and design.

Since 2004 there have been no budgets available for the CurrDept, except wages. Therefore nobody can be paid for correcting known errors in the existing books before the next print run. It is highly remarkable that all the equipment, mainly computers, is not used because of the lack of staff and budget.

The problem with the lack of budget for employees also hinders the integration of the two parts of the books of one year into one book, although this is the policy of the Ministry. If it were implemented, a huge amount of money could be saved and printing and distribution problems could be reduced.

The **principal workflow** of textbook development in a certain subject since 2000 was:

1. Phase: Decision Phase

There were three MoE Commissions for every subject installed: the Subject Board, the Revision Committee and a "Judgement" Committee.

The **Subject Board** was in charge of defining the objectives for the subject oriented work on the basis of the related curriculum. It also defined the global schedules and gave the final ok on the manuscript. It consisted of 12-15 professionals, but it could be less or more depending on the subject and level/grade. Participants were:

university professor (lead), a pedagogue, subject scientists, a curriculum specialist, a specialist from the Curriculum Dept., an inspector from the MoE and teacher(s).

This was not a permanent Committee, and only met on occasion.

The **Revision Committee** was in charge of evaluation and control of the concrete texts and materials of the manuscripts, particularly concerning the Arabic language and Arabic typewriting after delivery of a final draft manuscript. It consisted of a number of subject and language specialists, selected by the ERDC.

The third Committee was the "**Judgement**" **Committee**. They were the deciding board in the event of conflicts on any side or in any phase of the work process.

All three institutional groups are independent of each other.

Issues of Phase 1:

- There were too many people and organizations involved which belong to different governmental parts. This might lead to unnecessary conflicts regarding subject oriented work and to deadline problems.
- The CurrDept is dependent on the orders and the input of them. They are not involved in the process and therefore not able to bring in pragmatic work-oriented arguments, particularly concerning workload and schedules.
- An overall responsible "Subject Project Manager" is missing. So coordination of the different processes and people involved is hardly possible.
- It is not clear if there was a coordinating body for all the different Subject Boards in order to cope with the obvious logistical and capacity challenges of the whole process of renewing contents of textbooks for grades 1 to 12 (see ANNEX A I).

2. Phase: Manuscript work preparation phase

The manuscripts were prepared by authors. Authors are subject specialists and - in some cases - teachers. The High Commission for Curriculum selects authors for all subjects, confirmed by the Vice Minister MoE.

A number of authors for a subject, up to seven, built the **Author Group** which decided jointly:

- about the concrete concept (content-wise, pedagogical, methodological) of the whole book
- about the definition of the content of the chapters and lessons
- about the distribution of the manuscript work among them (e.g. Author A is writing chapter 1-3, Author B chapter 4 to...) One of the authors took over the role of coordinator; he was also in charge of coordinating the work of the authors with designing and layouting activities.

Basis of this concrete manuscript work preparation phase was

- the input from the Subject Board
- the syllabus of the subject for this grade
- global instruction about how the concept should look ("Concept Manual")

Issues of Phase 2:

- **It is not clear what the qualification criteria for authors were.**
- **it is not clear in which way the authors are involved or able to influence layout, design, number of pages, number of colors, etc.**
- **the influence of the CurrDept on authors and therefore the possibility to control their work regarding deadlines and quality seems to be minor**

3. Phase: Manuscript phase

Authors met several times but much work was done at home. They wrote their parts of the manuscript at first draft by handwriting on paper. This was then the basis for the first typesetting (see below). Gradually the typeset manuscript was then improved, corrected, further worked out by the authors, and design elements, graphics, pictures etc are integrated. Normally three more versions were produced before a draft final manuscript was ready and could be confirmed as the final draft by the Author Coordinator.

In many cases this phase, where all the most creative pedagogical work took place, was under high deadline pressure. So often only a few months, sometimes less than three, was scheduled for this phase.

Issues of Phase 3:

- **It is not possible to develop high quality manuscripts under such conditions and such time frames. Consequently books were often not ready in time.**
- **CurrDept had no authority to influence schedules according to workload and to supervise the authors.**
- **Instructions on formal layout requirements can hardly be followed when authors write manuscripts by hand instead of by computer. This might lead to unnecessary duplication and excess of pages (authors tend to write much more texts than needed).**

4. Phase: Typesetting

Typesetting was done on computers by people that are not employed on a permanent basis but hired and transferred for this work from other departments within the MoE and in most cases not even for a long period. Moreover, these employees were not part of the Curriculum Dept., but of an extra "Book Layout dept.". Some staff needed to be trained first, which was mostly done unprofessionally and "on the fly".

Up to 15 people, including designers, worked in a narrow room in front of their computers, which are equipped with all relevant software. The actual workload varied tremendously from no work at a certain period up to nearly day-and-night work in other periods.

The typesetters integrated corrections and changes - coming from the authors or the designers - into the first set and every following version, until the final draft version was ready.

Issues of Phase 4:

- **It is not possible to develop high quality manuscripts with personnel that are not permanently involved and professionally trained. Typing errors are one of the obvious consequences. Individual responsibility regarding quality is also lacking.**

- It is not sensible to separate organizational editorial work in the CurrDept from the DTP work (typesetting, design) in the Book Layout Dept
- A huge capacity problem - not enough rooms with enough DTP workplaces - consequently made shift work necessary, with negative results on quality.
- Additional tools like printers and scanners were rare and often not usable due to lack of toner or paper.

5. Phase: Design

Designers (some of the typesetting people were also designers) were in charge of composing the pages, of drawing themselves graphical elements, of integrating pictures, etc., so being artistically and creatively active. They were led by a Design Director. They worked on Macintosh PCs, in the room described above.

Apart from the Jordanian Design Director, who had been employed for four years, the other designers worked on an irregular basis.

Pictures of all kind are stored on CDs and can be used.

Issues of Phase 5:

- Similar to Phase 4
- Creative people need more space (room, working conditions and time) than was the case in order to produce high quality books
- Obviously a server system was not used in order to store intermediate versions of the manuscripts and to supply pictures etc.
- It is not clear how pictures can be found effectively on numbers of CDs and what the (technical) quality is. Nor it is clear where these pictures came from, if copy right aspects have been considered, etc. Moreover: how new pictures are selected and from where?

6. Phase: Control phase

Ongoing error corrections were done by employees in the Curriculum Dept. and the authors during the whole DTP process and were implemented by the typesetting people. Then, after the final draft version was ready, the Revision Committee checked this version and corrected it on the printout, which then lead to further text corrections which were done by the Book Layout Dept. A final check again from the Revision Committee gave the "green light" to this final manuscript.

Issues of Phase 6:

- The involvement of the Revision Committee delays the publishing process, as the final draft manuscript was accepted before by the Author coordinator.
- The separate responsibility for editorial work in the CurrDept and the DTP correction work by the Book Layout Dept needed an additional effort in coordination.

7. Phase: Delivery for printing

CurrDept. produced copies of the Final Manuscript on CDROM and delivered them to the GCSBPP for distributing them to the printing plants. A proof print control did not take place.

Issues of Phase 7:

- No proof print control by the responsible department for content quality (CurrDept) is unacceptable.

6 Overall valuation of the workflow observations and issues

No clearly defined responsibility

There are too many players involved in the complex process of developing schoolbooks: The formal institutions *Curriculum Council* for curriculum development and author selection, *MoE* finance department for provision of budgets, *ERDC* for coordinating and supervising the *CurrDept*, *Subject Boards* for subject definition tasks, *Revision Committees* and the operational groups *Curriculum Department*, *Author Groups* and *Book Layout Department*.

It is obvious that this creates decision-making problems, time pressures and, if problems arise responsibility is easily shifted to any of the other players.

No longer term planning for distributing workload over periods of time

Overall planning from the MoE National Strategy, the annual MoE Detailed Workplan or BEDP workplan is clearly a guide for the overall process but it does not build a basis for the concrete longer term planning or scheduling of developing dozens of schoolbooks. Planning - as it is relevant for the operating units *CurrDept* and *Book Layout Dept* - only seems to be done with individual book development and is not coordinated at all, neither with other books to be developed at the same time nor with the personnel situation in the *CurrDept* or in the *Book Layout Dept.*, nor with workplaces and available tools (and also not with the printing capacities).

This leads to the fact described above that actual workload varied tremendously from no work at a certain period up to nearly day-and-night work in other periods with the final consequence that books, after delayed printing, did not come to the schools in time.

Unrealistic product development time planning

The period for the development of a certain title not only depended on the availability of authors but also on the date of budget allocation by the finance department of the MoE. Subject Board only then started work, while the publishing date was already fixed. So manuscript writing and the DTP process was compressed - not a good condition for high quality work. In principle 6 to 8 months development time was scheduled, from the start of defining the pedagogical base and the contents by the Subject Board until final manuscript for printing. European standards for this process are 12 to 24 months depending on subject and level (except for Grade 1-2 books).

The Director of the CurrDept, Mr. AlKhaldi, reported an extreme example of a grade 12 science book:

- in April 2004 the budget was decided and allocated from the Finance Dept

- until end of May 2004 the Commissions were composed and did their work, only then could the CurrDept and the pre-selected authors start work

- Deadline for final manuscript to print press was July 2004 - so there were just about 2 months time!

No regular budgets

It was surprising to learn that each individual title needed the confirmation and allocation of a specific budget to the *CurrDept*. Salaries of temporary staff are not a factor in the budgets as people are seconded from other MoE departments. Investments for computers etc. needed extra allocation of money. Recurrent budgets for day-to-day expenses did not exist.

The *CurrDept* therefore had no possibility to influence and readjust the use of budgets, which would help to improve certain aspects of the work efficiency and organization. It particularly impedes the improvement of the actual books, the correction of errors and the editorial work that should be done in order to integrate the two half year books.

Lack of permanent and trained personnel

It is obvious that untrained employees are hardly able to do quality work. Permanent staff was not used due to the budget regulations.

Permanent staff would allow them to be well acquainted with the needs of their jobs and the products they work for. This is a basic condition to improve individual responsibility for the quality of their own work and therefore for the whole product.

Not enough space, equipment and tools

As described above there is a lack of rooms and equipment, which does not help to motivate creative designers and others to do a good job. Furthermore, it prevents effective work when PC printers do not work or light is defective.

More effective work is fostered by the installation of a content management system - it seems that such a tool was not available.

7. Recommendations

The recommendations are based on the following **three strategic challenges** in the area of schoolbook development and on the above findings in order to "*...achieve education of good quality for all children by 2015...*":

Curriculum renovation

The MoE has decided to start the process of renovating the actual curricula. This activity starts in October 2007 and will result in a change of about 20% of the current curricula. Part of this is the intended introduction of English as a foreign language (and probably computer science) from Grade 4 which influences the other curricula in terms of allocation of lesson hours in Grades 4 - 6.

New Textbooks development

For implementing the New Curricula, new textbooks and teacher manuals need to be developed for all the subjects. Though the expert does not know details about the objectives of the intended Curriculum changes, it is obvious that a 20 % change - in methodology, in content or in timetable (lesson hours per week) - leads to new textbooks. It is in most cases not sufficient to just change parts of the current books.

Schoolbook improvement

The current schoolbooks need to be improved and half year titles must be integrated into one book. This is an important task despite upcoming new products as it will take a couple of years until new books are available for all the subjects in all grades.

These activities depend, of course, very much on each other and - for quality reasons - realistically need to be performed in a well organized way with the focus not on short term efforts but on reliable processes which allow sustainable results.

7.1 Global recommendations:

The following recommendations give an overview about the strategic activities and principles that should be implemented in due time. The consultant is aware of the fact that these proposals are visionary because they lead to a serious change of the current Schoolbook Policy of the MoE with regard to the preprint development work processes.

More specific recommendations about proposed short term and longer term actions are made in the next paragraphs.

Change organization structures

A German proverb says: *Too many cooks spoil the broth*. In Yemen there are too many institutions with different responsibilities involved in the schoolbook development process (see above).

In principle two different bodies are sufficient:

- the governmental Curriculum Sector with the responsibility for developing policy and curricula including timetables and syllabuses according to political, societal and scientific conditions and requirements and to approve and certify the final manuscripts.
- the School Publishing Unit in the MoE with the responsibility for organizing and executing the whole process of publishing: the overall and yearly publishing plan, the workflow, the use of permanent budgets. The actual CurrDept in the ERDC is the department that could be upgraded to become the School Publishing Unit, after an intermediate period of being an Editorial Office with more responsibilities than at present.

It is not possible to implement this without the political will of the government, and in any case this can only be done as an ongoing process, particularly with regards to the competences of such a School Publishing Unit which, as yet, are neither available in the CurrDept. nor elsewhere.

Operate like publishers worldwide

Independently from the above organizational change it is possible to improve the way of coping with the actual strategic challenges (curriculum renovation, textbook development, schoolbook improvement).

- *Introduce five year planning phases, renewed year by year.*

This is an absolute must in order to allow realistic and even manpower, resources and budget allocation over long periods of time.

- *List and clarify responsibilities.*

Responsibilities of acting organizations and people need to be described as well as their duties and rights. This helps to improve motivation and fosters cooperation. An "ultimate publishing management authority" (A. Smart) needs to be appointed, equipped with overall responsibility and decision power.

- *Introduce project management structures*

A major condition for a planned, straightforward and controlled work process is the introduction of project management structures for every title, for every area (grades or subject) and for the whole publishing activity, with fully responsible Project Managers in each hierarchy level.

- *allocate budgets*

It is essential that the operating units like the CurrDept get a permanent budget, not only for investments but also - and more importantly - for day-to-day activities over longer periods than just one year.

- *buying of external/international services (e.g. know-how, licenses)*

It might be sensible to consider if other Arabic or European schoolbooks do not fulfill the pedagogical requirements, particularly for science education or in higher secondary subjects. To buy licenses is often much cheaper than developing your own materials.

Prioritize publishing plan

Updating curricula and subsequent development of dozens of new schoolbooks including teacher manuals (see Annex A1) makes it necessary to prioritize activities. It is more important to update main subjects like Arabic and maths than others. Furthermore, errors in current books for secondary grades are probably of minor relevance than in low grades.

Following these examples the overall publishing plan can be organized so that the workload of the operating departments (e.g. CurrDept) can be distributed over longer periods.

Organize work independently from school year and grade

Of course a new book needs to be in the schools at the beginning of a school year. This means that they are printed and delivered. Development should start long before, independently of print deadlines and the start of the school year, because development of a new textbook realistically takes one year or more per title if good quality is required.

Another aspect is the sequence of publishing. While during the 2000-2004 publishing period all books in all subjects of grade 1- 6, 7-9, 10-12 were developed so that they (theoretically) could be used at school from the following September, we strongly recommend altering this process. There is no sensible argument that says that all subjects need to be renewed at the same time or for the same school year!

We propose the following publishing sequence:

Publishing sequence for new textbooks (Example)								
May in year	2008	2009	2010	2011	2012	2013	2014	2015
Arabic Grade	1	2 4	3 5 7 10	6 8 11	9 12			
Maths Grade	1	2	3 4	5 7	6 8 10	9 11	12	
other subj.		1 4	2 5	3 6	7	8	9	
etc.					10	11	12	

There are a number of advantages when sequencing like this:

- students that get a new book in year 2008 don't need the following book until one year later
- students that started with an old book in Grades 1, 4, 7 or 10 can continue with familiar methodology when using the (improved) next book.
- the same authors, editorial and DTP people can work subsequently on successive titles which can lead to quality improvement and better scheduling.
- A further main argument for this publishing sequence recommendation is the possibility for the operating departments (Curr.Dept) to reduce the accumulation of high workload at a certain time and distribute workload over longer periods.

Employ permanent personnel and train them

A basic condition of performing quality work is qualified personnel, not only but particularly in the integrated CurrDept./Book Layout Dept. Selection and training of staff must be done before the main workload starts, which is probably in early 2008 when the first new books need to be developed according to the new curricula.

7.2 Short term action recommendation (from July 07 to Nov. 07)

RECOMMENDATION 1: Let the Curriculum Department become active!

Start to organize CurrDept as an editorial office. It is the responsibility of the MoE (not the ERDC) to improve or change the working situation of the CurrDept in terms of responsibilities, workload, employees, regular budgets, etc.

Most importantly is the formal integration of the former Book Layout Dept. into the CurrDept. and the formal assignment of a (at least intermediate) **Publishing Director (PD)** with the authority for planning and executing this start-up phase.

As soon as possible the following activities should be started:

- employ some layout/design specialists in CurrDept
- employ Chief Editors (CE) and product editor(s) for main subjects (e.g. Arabic, maths)
- improve technical situation (rooms, computer, printer, etc.)
- train them all, possibly on the job (see below) but supervised by external specialists
- allocate investment budget, training budget and recurrent budget for day-to-day costs for at least one year

RECOMMENDATION 2: Verify improvement of current textbooks!

Simultaneously, under the responsibility of the ERDC and the CurrDept., we recommend

- **organizing the collection of errors** in those current editions that need revision first. Criteria should be that they need to be reprinted and used in schools for another few years before new books are developed, or because they are strongly criticized. This can be done by small expert groups (EG) of max. 3-5 people (1 pedagogue, 1 scientist, 1-3 teachers) in 2 days sessions per title. In charge: ERDC.

- to **start improving current titles successively** (example: see Annex A1). According to the findings of the expert groups the new employees implement the corrections into the "old" manuscript files - this can be accompanied by external trainers in order to get trained on the job. In charge: CurrDept.

- to **integrate half year titles into one book** is a major task with a huge potential to save money. Therefore we propose that the EGs also check the changes that might be needed when the two parts are integrated. Problems might occur if the number of pages becomes too high, or if redundant content has to be reduced. The new staff again should implement the related changes. In charge: CurrDept.

RECOMMENDATION 3: Install a Planning Committee!

Additionally, but very urgently, we recommend that the MoE installs a Planning Committee, with a few members: one from the Ministry, one from the Curriculum Sector, one from ERDC, the new Publishing Director, and at least one experienced Chief Editor, probably from the private publishing sector under the lead of an experienced Management Specialist from the schoolbook publishing industry. Their task is to define and develop a draft **overall five year plan** concerning schedules, resources, man power, investments and budgets of the three strategic challenges: curriculum review, new textbooks development, improvement of actual titles. (see Annex A1, page "Textbook Planning" for an example of a possible development schedule).

This draft five year plan can build the basis for all future activities and allow the official bodies (MoE, Finance Ministry, other involved governmental institutions and donors) to decide about schoolbook policy change and the organizational and financial consequences.

7.3 Mid term action recommendation (Oct. 07 - Sept. 08):**RECOMMENDATION 4: Reorganize the editorial workflow!**

The main recommendation for this period is the improvement of the editorial development process by starting to reorganize the workflow. This is described below in more detail, see 7.5 below.

RECOMMENDATION 5: Improve author involvement!

Authors work is central for the pedagogical and scientific quality of schoolbooks. Even if a person is competent as a subject specialist, from university, as a pedagogue, or as a teacher that does not necessarily qualify him or her as an author. Further qualifications are needed, like the ability to write explanations and exercises in the right grade-related level and complexity as well as a sense for design matters. So authors also need to be trained and services must help them to do their tasks in an optimal and time controlled way. Therefore we recommend (in charge: CurrDept with the new Publishing Director and the CE):

- **train new authors** by asking them to write one unit of the intended schoolbook for trial.

Evaluate it with the Chief Editor and/or the main author of this book.

- **develop author guidelines**, which contain all the relevant information about the formal conditions of their work, the schedules, the responsibilities and tasks

- **develop templates for layouts** of units of the schoolbook that allow the authors to efficiently write their manuscripts in the right predefined length, structure and order. Layout templates are of course different according to grade and subject.

Example:

For a two page unit (which could be the learning material for one lesson) in Maths Grade 5 the layout might be structured like this: Start with a picture (e.g. drawing of a cylinder), explain by text the mathematical facts and/or formulas, present an example of a calculation, fix the facts by a result definition and then add a number of exercises, easy ones first and more and more complex thereafter. All units of this book could follow this scheme.

- **provide authors with means** (computers, online access to CE and PD) which improve the effectiveness of work (e.g. provision of electronic templates) and cooperation between the author as well as between the authors and the editorial and technical people (typesetting, design) of the CurrDept. Furthermore, it reduces unnecessary typing error correction by typesetters who can concentrate their work on layout design.

7.4 Longer term action recommendation (from Sept. 08):**RECOMMENDATION 6: Become more commercial!**

Looking at the longer perspective it is recommended that the MoE politically set the prerequisite for a less monopolistic but more commercial-oriented future of the schoolbook publishing policy. Elements of this are:

- plan regularly and iteratively year by year ALL publishing activities in five year periods

- upgrade the CurrDept as an independent School Publishing Unit (SPU) within the ERDC, probably with the integrated CurrDept/Book Layout Dept. as the editorial department (see Fig1.).

- allow SPU to license textbooks to private publishers, in order to print them in better quality and sell them to students or parents. This can be the start of commercial activities in order to find additional financial resources for improving the publishing infrastructure.

- allow SPU to publish licensed books (textbooks and others) from other (international) publishers and sell them in private markets.

- allow SPU to tender printing orders with private printers aswell. This will help to reduce availability problems at schools and to improve the print quality.

- It should be considered whether in the long term the SPU could become a state-owned but commercially and independently organized Publishing Company.

7.5. Recommendations concerning the workflow (RECOMMENDATION 7)

The following recommendations describe activities, tasks and responsibilities for the publishing workflow. It summarizes many of the observations described above and recommendations for the concrete situation of developing and producing schoolbooks of good quality for the children and teachers in Yemen during the next few years.

On the basis of the new curricula and syllabuses from the Curriculum Board:

Central planning phase - in charge: Planning Committee (see 4.7.2) and CurrDept
The Planning Committee defines the overall conditions in detail in a draft overall *five year plan* concerning schedules, resources, manpower, investments and budgets of the three strategic challenges: curriculum review, new textbooks development, improvement of current titles. The CurrDept with its Publishing Director and Chief Editors refine this five year plan, resulting in short term action and resource allocation plans.

Subject or title related planning phase - in charge: CurrDept task group with Chief Editor, (main) authors and "art director"

Their main tasks are:

- title-related schedules and collaboration planning
- transformation of syllabuses into pedagogically sensible chapters and units, lesson method development, layout directions (with the involvement of an Art Director) and template development
- technical specification (number of pages, colors, illustrations, etc.)
- author guidelines development and task distribution

Manuscript work phase - in charge: authors, related Chief Editor and subject editor(s)

The Chief Editor and subject editor coordinate and supervise the authors work. This means:

- providing authors services, e.g. layout templates, guidelines, computer access, organization of joint meetings
- organizing and implementing the review of the iterative manuscript versions and preparing them for the following phases

Design phase - in charge: DTP typesetters, designers

Supervised by the editor in charge and with the involvement of the Art Director the DTP process is performed:

- typesetting
- page layout implementation
- iterative correction according to the information coming from the authors or editors
- graphics design and integration into the layout
- photo selection and integration into the layout

Finalization phase - in charge: authors, editor, correctors, Chief Editor

The draft final manuscript is reviewed by the authors and editors and any further change in the manuscript is implemented by specialized DTP staff.

The final manuscript is then accepted as final by the Chief Editor.

It is the editor's responsibility that at the end of the three phases above a final manuscript exists without mistakes and according to the set quality standard regarding content and pedagogy.

Formal review phase - in charge: MoE Curriculum Board

The Curriculum Board approves the final manuscript. In case this final review requests further corrections and changes then these are performed by the DTP staff. A formal certification from the Curriculum Board is then the precondition for producing the preprint version of the manuscript.

Preproduction phase - in charge: CurrDept. production staff

The production staff's task is to prepare the manuscript technically for print:

- provision of electronic photo/graphics data for print
- preparation of CD
- delivery to printer organization
- print proof control, together with editors in charge of this title

Storage phase - in charge: CurrDept. production staff

In order to store the final version of any title so that further editions are identical with the last one a storage medium needs to be used. CDs are not optimal as they are easily damaged or destroyed. A server based databank with back-up function is needed. This content and media databank can also be used as the place where all the photos and drawings are individually stored and described by metadata. This helps to track them for any further use. Furthermore, administrative data belonging to pictures (copyrights, name of photographer or artist, etc.) can be centrally stored here.

It is the task of the production staff to prepare the picture data description (metadata) and to store them in the system.

Postproduction phase - in charge: editor, authors, DTP staff

Nobody is perfect. In all work environments mistakes happen, also when developing school-books. Therefore it is important that the collection of errors of all kinds is organized centrally at CurrDept where the competence of dealing with them - e.g. correcting typing errors or changing text parts, redesign drawings - is available and can be done in time before the next reprint is scheduled.

8 Proposal for the implementation of the recommendations

"It is the responsibility of the MoE (not the ERDC) to improve or change the working situation of the CurrDept in terms of responsibilities, workload, employees, regular budgets, etc." said Mr. Al-Jendari, Under Secretary of Project & Equipment Sector.

Moreover, a general policy decision by the MoE is needed to reduce the involvement of the various committees in the pre-print publishing process and to reorganize this process more efficiently in order to improve the pedagogical quality of the schoolbooks for the sake of the society in general and the teachers and children in particular.

Under the condition that the MoE is preparing this policy change it is highly recommended that this process is seconded by a long term expert, probably a European senior schoolbook publishing professional. The main tasks of this expert will be:

- the consultancy of the MoE regarding the reorganization of the whole process and allocation of responsibilities (see Recommendation 1)
- the consultancy of the Planning Committee in charge for the development of the basic 5-years publishing plan (see Recommendation 3)
- the consultancy and active participation in the reorganization of the operating publishing and editorial units (see Recommendations 2, 4 and 5)

The activities of the expert will - in the long run - also positively influence the possibility of the schoolbook market becoming a more commercial activity (see Recommendation 6).

The expert should start as soon as possible, definitely before the start of the development phase when the new textbooks need to be developed according to the new curricula. A minimum duration of his stay is two years.

Part B :

**Evaluation results of the situation analysis +
recommendations for improvements concerning:**

**The Production and Distribution of Textbooks
in the General Corporation of School Book Printing Presses**

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Introduction

According to the “National Strategy For Development Of Basic Education in good quality for all children by 2015. An important element in this respect is the timely supply of textbooks of good quality and in sufficient quantity.

The Ministry of Education is aware that the general public as well as the teachers, school directors and supervisors are not satisfied with the current situation. Complaints refer to delays in the book delivery, poor quality, and insufficient quantity.

The Ministry of Education has identified technical and managerial problems in the printing presses, and has asked the “Basic Education Improvement Programme (BEIP)” for assistance to improve the situation. The focus of the assistance should be on the printing presses in Sanaa and Aden.

Two experts, Dr. Hamied Al Iriani / Yemeni expert and Mr. Herbert Schabmair, Dipl.-Kfm.,Dipl.-Ing. / German expert, that both have many years of practical experiences in the Yemen printing industry, have been asked to work out the following study.

The consultants spent two weeks in Yemen to evaluate the situation in the two printing presses in Aden and in the one in Sanaa. On the trip to Aden they visited also some warehouses in which textbooks are stored before distributed to the schools.

Several interviews were held with the Director of the General Cooperation for School-book Printing Presses and with the Managers of the different presses. Two interviews with the Minister for Education Prof. Dr. Abdusallaam Al-Jawfi, and the Vice-Minister Prof. Dr. Abdul-Aziz S. Bin Habtoor also took place.

In **paragraph 2.1 - 2.5** of the following study, **results of the situation analysis** are described. Allocated to the existing organisation units, which have been the target group of this study.

In **paragraph 3.1 - 3.5 recommended objectives and measures** are worked out, necessary to solve analysed problems and to improve weaknesses. Also allocated to the existing organisation units.

In **paragraph 3.6** the recommended objectives and measure are **allocated to three projects A + B + C with a different duration of time periods to be completed.**

That means : not only short-term objectives are necessary. Short-term measures are necessary to improve the situation as soon as possible, but also several sustainable

objectives- medium term and long term - must be discussed and followed up to be able to secure and save the longterm schoolbook supply as good as possible.

A detailed "**input plan + cost estimate**", **elaborated to the planned projects, is worked out in part C of this study**. This part shows the estimated costs for experts required , the cost for renovation of the machines and all other expenses, necessary to achieve the planned objectives.

Abbreviations:

Aden I	Printing press Aden-Manssoura
Aden II	Printing Press Mualla
MoE	Ministry of Education
GC	General Cooperation for Schoolbook Printing Presses
BEIP	Basic Education Improvement Programme (BEIP)

1. Foreword concerning the production of schoolbooks in Germany and other Middle Europe Countries

In Germany and in other Middle Europe countries, schoolbooks and other printed documents for schooling and higher education are produced by private printing presses.

These countries do not own print presses with machines for the production of schoolbooks. In Germany, even banknotes and identification documents are also produced by private printing presses.

The placing of print orders is decided by national and international biddings. The criteria to receive orders for production are price, quality and dependability.

2. Results of the situation analysis

2.1 Results concerning the basic strategy of the Ministry of Education for the supply of schoolbooks in the country

2.1.1 The monopoly position of the GC printing presses causes the lack of price and performance competition in schoolbook production.

The project "supply of schoolbooks" in Yemen is having a very difficult time. The books are often delivered too late, the delivered quantity is often not sufficient and the produced quality is very poor.

The Ministry of Education (MoE) has the monopoly for the development of books and, again, orders the production and distribution from a **monopolist, the GC**. This monopoly position of the GC printing presses creates the **following problems:**

- If a school is undersupplied with books, there is no option to purchase a schoolbook. Also, if the parents were willing to buy schoolbooks themselves, this would not be possible.
- The GC printing presses are not under pressure to print and deliver the required number of schoolbooks on time and in good quality. **There is no competition.**
- The MoE has now no experts with sufficient knowledge to tender and purchase the production of textbooks from the private printing industry.

2.1.1 Unexpected insufficient schoolbook quantities impede school education

The negative consequences of late delivery of schoolbooks on the quality of education is well known. One is often **surprised** when the books arrive late again.

Today, it is already foreseeable that less than 50 % of the required books will be available for the start of the 2007/2008 school year.

The MoE should nominate a project leader "supply of schoolbooks", who has the **operative responsibility** for the punctual delivery of the schoolbooks needed by the schools. Someone with a strong personality, who is involved **daily** in achieving this objective and who has received the necessary **authority** for this position

An expert who, duly informs the MoE Management of schedule discrepancies. This person should be a contact person for the schools, districts and Governorate, a sort of **ombudsman for the target groups**, for the book beneficiaries.

2.1.3 The budget orientated financing of the GC and its printing presses is responsible for a lack of cost awareness, missing best opportunities for material purchase and possibly problems of material supply

When company management is budget orientated, there is a risk that important criteria such as costs and production performance play only a secondary role.

The GC was created 25 years ago, as a self-dependent organisation to produce schoolbooks for the MoE. Payment was to be order-related. This means: that the GC must supply the MoE at the beginning of the year with differentiated price offers for the book production.

The MoE then must compare these prices with offers from the private sector and negotiate with the GC. The GC will then be paid based on this price - settlement = order-related financing.

It should be checked if the existing budget orientated financing can be – at least partly – replaced with an order-related financing.

The payment of monthly and quarterly budgets makes it difficult to purchase large quantities of material for the best price and impedes the long-term material supply.

Most of the time the ministry of finance pays the agreed budgets each month or quarter. The consequences are, that the GC does not have sufficient fundings to purchase for example paper in large amounts with best opportunities of price, and that the GC must divide the required paper delivery in different parts, therefore bottlenecks in supply are possible.

2.1.4 Free schoolbooks often have no value – in case of a book shortage there is no possibility to receive these missing books from any other supplier.

Presently, the pupils in Yemen receive their schoolbooks free of charge.

In the eyes of the beneficiary, something that has no price often has no value. Consequently, the books are often mishandled, dirtied and damaged.

Also, it is very difficult to completely control the transportation of the books from the printing press to the schools. There is a risk of an unorganised black market. According to information from the school directors, this black market already exists!

At present, the involvement of private bookstores is not possible, which would help to solve the situation. The MoE should find a way to avoid this situation

2.2 Results concerning the General Corporation of Schoolbook Printing Presses

2.2.1 Results concerning the cooperation of the GC with the Ministry of Education as a customer

The problems of planning and development of schoolbooks in the Ministry of Education are described in detail in Part A. Regarding the MoE's role as the GC client, it is always reported that the MoE places the print orders much too late for the coming school year.

Fact is, the printing orders for the 2007 / 2008 school year were according to GC management, placed in May 2007.

Based on this information, it is impossible for the GC to produce and distribute the books on time. The MoE must place the print orders soon enough, so that the GC

- o can purchase the sufficient material on time and
- o have continuous year round utilization of the machines in its printing presses

2.2.2 Results concerning the general strategy for the production and distribution of textbooks in the three printing presses in Aden, Mukallah and Sanaa

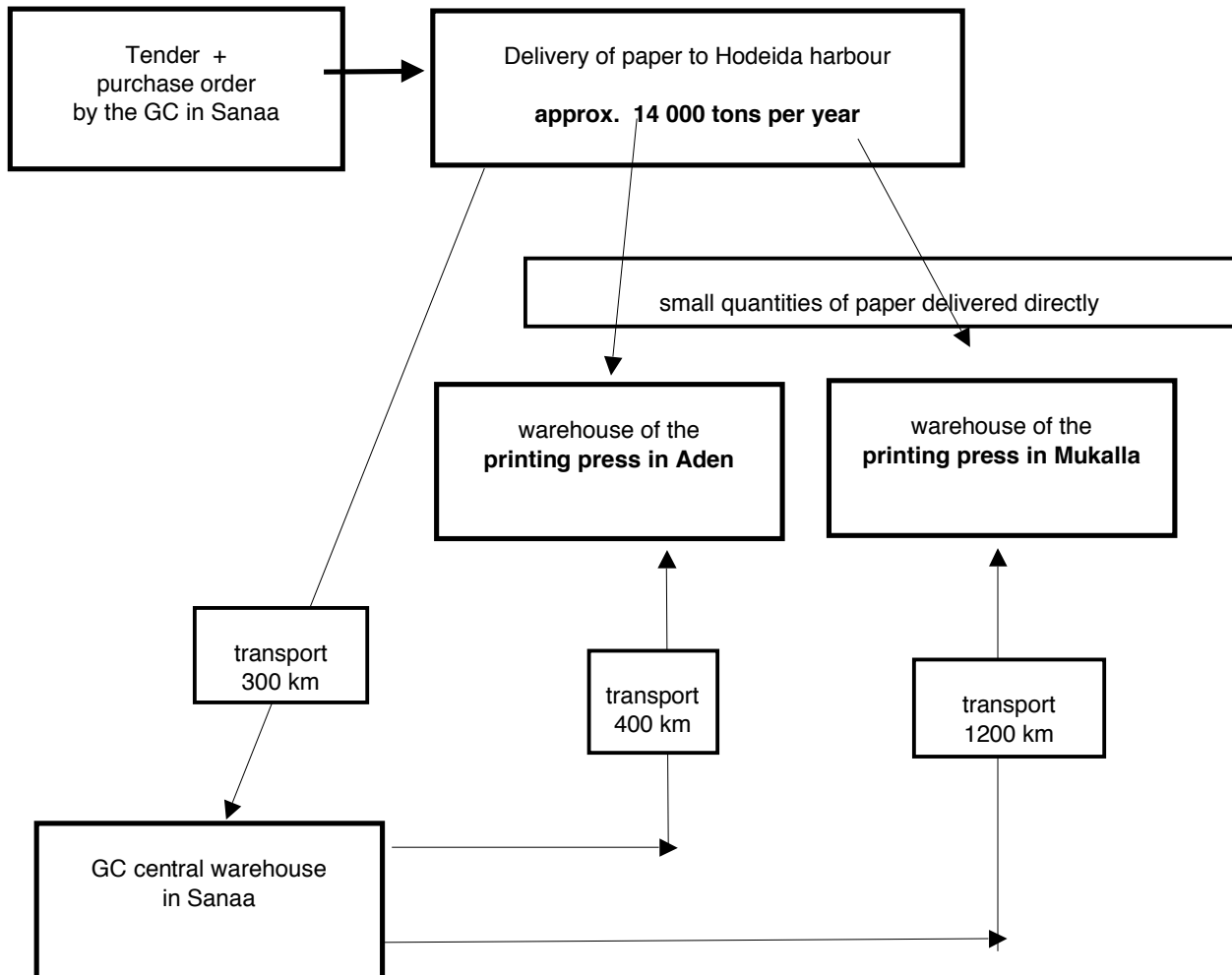
The production and distribution of schoolbooks takes place at the GC in three different printing presses in Sanaa, Aden und Mukallah.

Regardless of the technical and organisational problems at the three printing presses, the logistics for the material supply and for the distribution to the Governorate storage-buildings could be organised in a cost-saving way.

- A. The delivery of most of the paper from Hodeida to the GC-Head quarters in Sanaa and from there on to the printing presses in Aden and Mukalla, causes unnecessary transportation costs.**
See chart on next page
- B. Due to the production method of printing the complete run of each book at one printing press and then distributing these books to the whole country also causes unnecessary transportation costs.**
See chart on next page

This sector offers large cost saving potential. This is estimated at US \$ 300 000.- - 550 000.- per year.

A. The supply of paper to the printing presses in Aden, Mukallah and Sanaa usually takes place as follows:

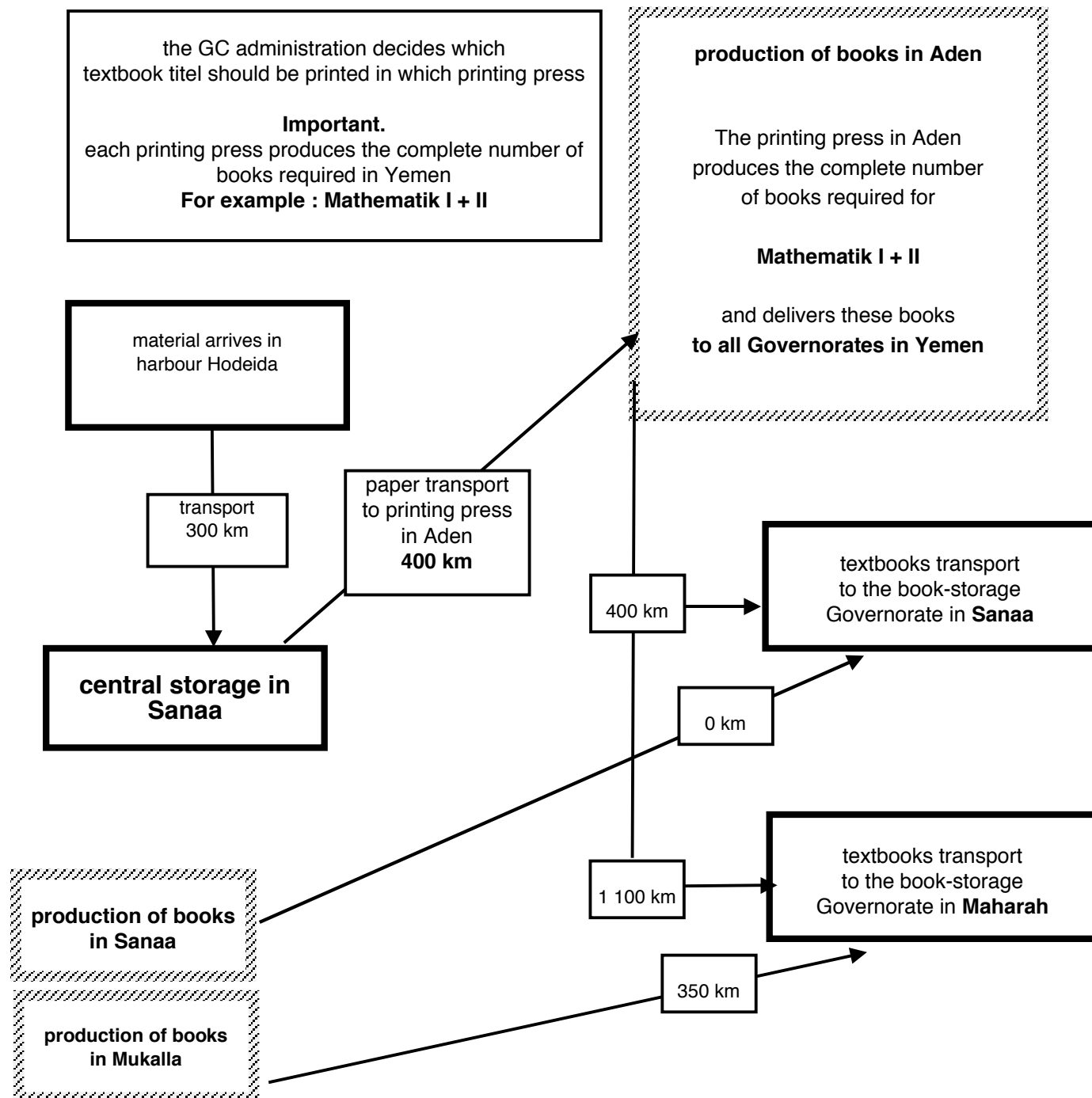


Conclusion :

Many tons of paper are delivered from Hodeida harbour to Sanaa, and then from there to Aden and Mukallah. Unnecessary transportation costs !

It would be simpler and cheaper to deliver the materials to the Aden and Mukallah harbours, and then from there directly to the printing presses.

B. The textbooks production at the three printing presses takes place as follows.



Conclusion :

It would be much cheaper for example to produce all book titles for the Governorate of Sanaa in Sanaa, and to produce all book titles for Maharah in Mukallah.

The truck loading is often not optimised because of "emergency supplies" to the Governorates.

2.2.3 Results concerning the organisation and management of the GC

Organisation:

The structural organisation of the GC – see annex B. I – and many discussions with management show that, apart from the General Director,

- **no employee has a direct controllable responsibility for the major GC tasks.**

These are:

- **the in time schoolbook production in good quality and the in- time delivery to the warehouses in the different districts and governorates.**

45 GC employees only work for the **central administration** of the three printing presses. Their tasks should be to assist the printing presses as much as possible to execute the production in the best possible way.

Employees payment and motivation

It must be noted that the average income of GC administration employees is approx. 3 times higher than that of the printing press employees.

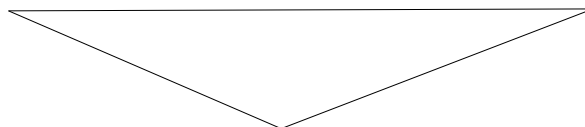
The overtime payment is an inherent part of wages. This means. that regardless of doing overtime or not, every employee receives this bonus. This leads to poor motivation and poor employees interest in doing the best job.

2.2.4 Results concerning necessary controlling instruments for the GC

It was not possible to evaluate the complete and present GC reporting system in the short time available. There are many statistics available, however it is quite clear that important **business management information** -

- **for a cost- and performance- oriented management**

is not available. This should be considered a major weakness.



For example:

Information + operating figures + comparisons like :

- **operation figures in % for waste paper**
(value of paper purchased - approx. US \$ 12 Mio – relative to the value of paper for misprint and damaged paper)

observations at the printing presses show that there is a cost saving potential of approx US \$ 500 000.- – 600 000.- = 5 % per year – it could possible be even higher

- **operating figures showing the consumption** of ink and other relevant consumable materials – relative to the produced quantity of books
- **calculation of cost categories** like:
 - personnel costs relative to important cost units and cost areas such as production, administration, transportation
 - costs for transportation
 - energy costs for air-conditioning
 - and so on

The present reporting system is based only on budgets and does not include the production performances at all

The present system of **cost calculation for printing orders** could not be evaluated. As the above mentioned information is not available, the existing calculation method would have no sufficient informational value

2.3 Results concerning the production and distribution of textbooks in the Aden-Manssoura printing press

2.3.1 Results concerning the equipment and production process in the Aden- Manssoura printing press

The printing press production capacities were supplemented in 1995-1997 through own resources and with bilateral support from Germany. A large warehouse was reconstructed so that various machines could be installed and put into operation.

An web offset press was planned as part of the equipment, but up to now has not been purchased. For this reason, the present bookbinding production capacities are twice that of the printing department.

The press has no digital pre-press department. It is dependent on the films delivered from Sanaa.

In the years 1997 to approx. 2002, **the printing press produced annually** approx. 8 - 9 Mio schoolbooks, with an average of 96 pages.

The production performance per year has decreased by approx. 40 – 50%. Realistically, the press can only produce 4,5 Mio schoolbooks per year (average of 96 pages). The production continues to decline.

The print quality is very poor.

Reasons for the reduction of the production performance and the poor quality are:

- 100 % of the print presses have important technical problems. They must be repaired as soon as possible.
- The state of the bookbinding machinery is average. Small repairs are needed.
- The condition of the other small machines is average.
- The films delivered by the printing press in Sanaa are of poor quality.

Management and workers do not have an understanding for good production quality

The building is in an average to poor state: it must be noted that

- in spite of the air-conditioning, the staff works with open doors
- in spite of the air-conditioning, the staff works with open windows,
- and that the employees have no regard for cleanliness.

Dust is one of the main reasons for quality and machines problems.

According to technical management, the press is unable to use approx. 20% of its production capacities because the necessary materials are not delivered from Sanaa in time.

2.3.2 Results concerning the management and skilled workers in the Aden-Manssoura printing press

Technical Management:

It is quite obvious that the technical management of the printing press on the whole and for the individual production departments is not properly executed.

The print quality is very poor. If the problems were noticed and the necessary measures were taken, improvements would be possible.

One example observed during the visit:

The replacement of a printing blanket and packing sheets in a printing machine would have improved the print quality a lot. Why wasn't it done, why does the production manager not care for it ?

There are many print technical deficits at the management level. This could be solved with adequate training. But it should be checked if all managers in the print press have the capability to be leaders.

The printing press management is not active; it still takes advantage of the good conditions of the past.

There is no reporting system comparing the monthly plan to actual figures to show which measures could be taken.

The forms for the technical organisation and order processing were introduced in 1985. There is not much discipline to use the forms, the management does not control if these forms are used in the correct way.

Skilled worker:

It is obvious that skilled workers with a print technical education on the machines and the managers with print technical knowledge will retire in a few years. They received their training during a German project in 1980 -1985

There is a lack of skilled personnel in the sectors Service and Repairs.

The printing press has hired many employees these last years. A systematic print-technical education has not been provided.

2.3.3 Results concerning the necessary controlling instruments for the Aden-Manssoura printing press**Reporting system**

See Item 2.2.4

2.4 Results concerning the textbook production and distribution in the Aden-Mualla printing press

2.4.1 Results concerning the equipment and production process for the Aden-Mualla printing press:

The print press Alhamdanai Printing was founded in 1950. In 2004, a ministerial decision was made that the printing press should be integrated into the GC.

The printing press presently employs 150 persons. The production is minimal. The GC pays approx. 80 000.- US \$ per month for these employees.

The printing press has machines and equipment purchased between 1982 and 1985. All are in a poor or very poor condition, except for a rather new 4 colour DIN 3 printing machine. Most machines are not in operation. A web machine and a small format sheet-fed press were in operation for just one hour during our visit. Most pre-press and plate-making equipment is very old and no longer in operation.

The print quality is very poor. See above for reasons.

The printing press has large production and storage buildings, these are in an average or poor condition. Broken windows are not replaced, damaged floors and doors are not repaired.

Unusable trash such as old ink containers, paper rolls, damaged equipment and machines, old material, damaged books and paper, all this lays around in the production hall and the warehouse. They disrupt the production process and should be disposed of.

In the last 3 years, **the GC management has not succeeded in improving** this print press and its equipment with new or better machines. Furthermore the GC has not succeeded in integrating the employees and the management into the group of printing presses.

For a long period of time, paper rolls were delivered that were not adequate for the use on the existing offset web press. This machine needs paper rolls 70 cm wide. The GC only delivered 100 cm wide rolls. These rolls must be cut to 70 cm width. This results in 30 % waste and major problems for the printing process.

Two or three printing machines and some bookbinding machines can probably be repaired and returned to operation.

If the existing web printing machine 4/4 c – 32 pages was repaired, this would mean a higher print production capacity than the existing one at Aden-Manssoura presses. The capacities of both sheet-fed printing machines could also be added.

This means that major production should be possible for a limited period of time.

Exact statements can only be made after technicians have examined these machines.

The present value of the existing machines and equipment is estimated at approx. US \$ 500 000.- – 1 000 000.- The building and property value is much higher.

2.4.2 Results concerning the technical management and skilled workers in the Aden-Mualla printing press

Technical management:

This company now employs 150 persons. They work in three shifts (also when there is no work to do).

Despite the lack of work, the printing press is not correctly organised and the warehouses are very untidy.

If the printing press was to receive new machines, the correct material and the corresponding orders,

- **it would be very important to train the technical management and to supply substantial consulting for the reorganisation.**

Presently, the cooperation with the Director of the Aden Manssoura printing press is very problematic.

There is no reporting system showing monthly figures comparing planned production to actual production, so that the corrective measures can be taken.

Skilled workers:

If the printing press was to receive new machines, the correct material and the corresponding orders,

- **it would be very important to train the skilled workers**

The skilled workers potential is good, however their education and practical experience is not sufficient to organize and execute a success orientated production.

2.4.3 Results concerning the necessary controlling instruments for the Aden-Mualla printing press

Reporting system

See Item 2.2.4

2.5. Results concerning the textbook production and distribution in the Sanaa printing press

2.5.1 Results concerning the equipment and production process for the Sanaa printing press

The production capacities of the printing press were supplemented in 1995-1997 through own resources and with bilateral support from Germany.

In 1997 – 1998, the production capacities were increased; the GC financed this investment. Two sheet-fed printing machines, a perfect binder and a Herkules-imaging unit were purchased and an additional building was constructed. At that time the printing press was in a good operating state.

From 1997 until approx. 2002, the printing press produced approx. 50 Mio schoolbooks with an average of 124 pages per year.

In the last years, the annual production performance has decreased by approx. 30 – 40 %. Presently, the printing press is only able to produce approx. 30 – 35 Mio schoolbooks. This tendency is continuing.

The print quality is very poor.

The reasons for the production performance decline and for the poor print quality are following:

- The printing machines have average technical problems. They must be repaired or overhauled within the next months. A good machine has been out of order for 12 months and has still not been repaired.
- 100 % of the bookbinding equipment is having major technical problems only producing poor quality and performance.
- The machines are not properly maintained; the required repairs are not carried out.
- Almost all digital pre-press equipment is not in operation. It is either damaged or the workers have not been trained to operate it. This is a main reason why the quality of the books is so poor.
- A third shift has been created to attempt to solve the problems of the decrease in the machines production performance.

But this decision resulted in a 33 % increase of the personnel costs

“production”, that there is no time remaining to maintain the machines, and that unskilled workers work as responsible machine operators. This leads again to further decline of the machine condition.

Management and workers do not show much understanding for the required product quality.

About 10 % of the production areas is covered with “old” machines that can not be repaired. They should be sold or disposed of (for example: old sheet-fed print machines). They disturb the production process. A complete department – manual photography – is no longer needed due to digital technology. All the equipment should be sold. The space could be used for other purposes.

The **condition of the buildings is poor.** Broken windows are not replaced, damaged floors and doors are not repaired. The unrepaired windows and doors allow dust into the production halls, this causes major machine problems.

Unusable trash such as old ink containers, old paper rolls, damaged equipment, old material, damaged books and paper, all this lays around in the production halls and the warehouse. They disturb the production process and must be cleaned up.

2.5.2 Results concerning the technical management and skilled workers in the Sanaa printing press

Technical Management:

It is obvious that the printing press management in general and in the individual production departments is not sufficient. The managers have many deficits in the print technical skills, which could be solved by trainings. But it has to be checked if all managers in the printing press have the capacities to manage.

The printing press management is not active; it still takes advantage of the good conditions of the past.

There is no reporting system comparing the monthly plan to actual figures and showing which measures can be taken. The forms for the technical organisation and order processing were introduced 1985. There is not much discipline to use the forms, the management does not control if these forms are used in the correct way.

Skilled workers:

It is obvious that the skilled workers with a print technical education on the machines and the managers with print technical knowledge will retire in a few years. They received their training during a German project in 1980 -1985

There is a lack of skilled personnel in the sectors Service and Repairs.

The printing press has hired many employees these last years. A systematic print-technical education has not been provided.

2.5.3 Results concerning the necessary controlling instruments for the Sanaa printing press**Reporting system**

See Item 2.2.4

3. Recommendations to reach production stability and sustainable objectives

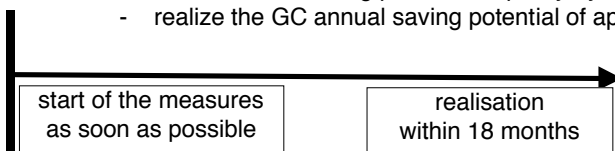
o Definition of recommended projects allocated to short-term, medium-term and long-term

Short term project - up to 18 months

Project A : Production Increase and stabilization

Objectives :

- secure the existing production capacity for approx. 5 years
- increase the existing GC production capacity by approx. 40 % - 60 %
- increase the existing production quality by approx. 100 %
- realize the GC annual saving potential of approx. 1,0 Mio - 2 Mio €

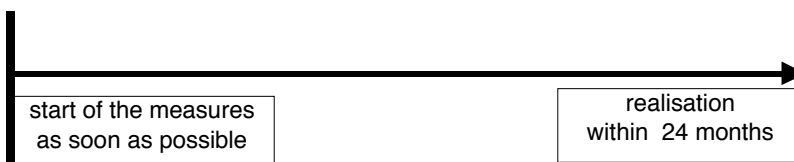


Medium term project - up to 24 months

Project B : Restructuring of the GC and the printing presses

Objective :

- secure the GC production capacity for approx. 10 years

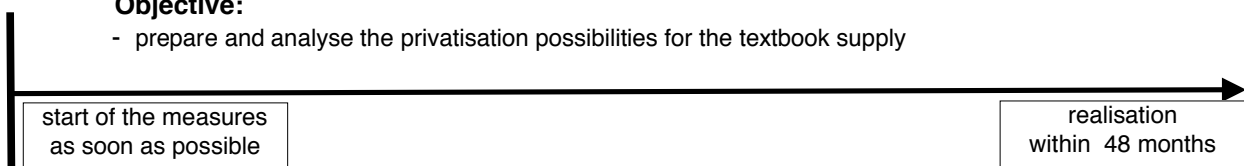


Long term project - up to 48 months

Project C : Move towards privatisation

Objective:

- prepare and analyse the privatisation possibilities for the textbook supply



3.1 Recommendations concerning the Ministry of Education for the supply of textbooks

3.1.1 Recommendations concerning the elimination of the GC monopoly position in producing and distributing schoolbooks

Objectiv 3.1.1

Content of project C : Move towards privatization

o The MoE should partly reduce the GC monopoly position for the schoolbook production.

The schoolbook customer = MoE, should be capable of obtaining quotations from private printing presses for the production of textbook- print orders.

The employees should have the expert knowledge how to evaluate the obtained quotations, to deal with suppliers and to place orders. Furthermore, they should be in the position to execute the orders and to control them.

The MoE should be in the position to pay for these orders without GC intervention.

As long as the GC print presses are not capable of competing with the prices and performance of private printing presses, the MoE should, within a medium-term period, place 20 – 30 % of its orders with private printing presses in the country and abroad.

Required measures to achieve the objective :

- o Decision about the organisational coordination within the MoE
- o Define job descriptions
- o Set a plan for the required staff
- o Selection of possible applicants – determine who receives the position
- o Preparation of written documents to be able to obtain quotations and organise tenders
- o Training for the persons in charge of the tasks
- o Consulting + training + support of the employees for the execution of tasks, up to 6 months

3.1.2 Recommendations concerning the nomination of an official project leader "supply of schoolbooks"

Objectiv 3.1.2

Content of project A : Production increase and stabilization

o **The Ministry of Education should nominate a superior project leader "supply of schoolbooks".**

His task should be to inform the Minister of the MoE, about the status of the production and distribution.

This project leader should furthermore be the contact person for the parents, schools, districts and Governorates, in case they are not satisfied with the delivery of books.

The project leader should be directly responsible to the Minister and have full authority towards the printing presses. He should write a monthly report about the actual status of the supply and the expected supply situation.

Required measures to achieve the objective :

- o Define job descriptions
- o Describe the applicant qualification profile
- o Selection of possible applicants – determine who receives the position
- o Preparation of written documents relative to the contents of the report to do each month:
 - Calculation of the number of delivered schoolbooks – in comparison to the demand for schoolbooks – expected deliveries in the next months – reason and responsibilities for an insufficient supply – determine, coordinate and organise suggestions of solutions for lacking schoolbooks
- o Consulting + training + support of the employees for the execution of tasks, up to 6 months

3.1.3 Recommendations concerning a “market-price orientated” financing of the GC

Objectiv 3.1.3

Content of project C : Move towards privatization

- o Check the **legal possibilities** to replace the GC budget orientated financing with an order related payment of produced and delivered books (at least in part).
- o **Assuring sufficient funding** so that the cost advantages of ordering large quantities of paper can be used.
- o **Obtaining tenders from competitors** in order to define and compare the present costs of the GC schoolbook production with those of private competitors.

Required measures to achieve the objective :

- o **Order related financing by the GC - Check the legal possibilities if the budget orientated GC financing can be replaced by an order related financing**
 - Check with legal advisor – if possible:
 - Define suggestions for example how the GC can present the pricing to the MoE and how the financing should take place
- o **Provide sufficient funding for purchasing large quantities of paper**

Check if the Ministry of Finance can provide the printing press with one-time funds so that the cost advantages of purchasing large quantities of paper can be used. These funds should only be used for the paper purchase and should be replenished each year by the revenues from the schoolbook sales to the MoE.
- o Prepare a concept to calculate correct paper consumption according to schoolbook deliveries + planned waste paper up to 10 %. Occurring differences should be at the expense of the printing presses and the GC.
- o **Seek tenders from competitors for the schoolbook production**

Define written documents to request prices from private printing presses. Consulting for the tender analysis. See also item 3.1.1
- o Consulting + training + support of the employees for the execution of tasks, up to 6 months

3.1.4 Recommendations to analyse possibilities of selling schoolbooks and involving private companies in the production and distribution process

Objectiv 3.1.4

Content of project C : Move towards privatization

- o **The MoE should check in detail and discuss critically the following questions and should search for possible alternatives and evaluate them.**

With the present system of free book distribution, parents and pupils have no option to receive missing books from any other supplier. Even if they had the money to buy the books. **Is there a reasonable alternative to this monopoly situation?**

The present situation "black market for schoolbooks" should be also part of these considerations.

If the private economy were involved in the sale of the books at a subsidised price, would it improve the book supply for the pupils? What other alternatives could there be? The findings should be assessed with advantages and disadvantages in comparison to the existing situation.

Required measures to achieve the objective :

- o Realisation of a study - including interviews - questioning of the involved pupils, parents and teachers to determine and evaluate the advantages and disadvantages of the free distribution versus the sale at a subsidised price.
- o Different price alternatives should be included in the study.
- o A possible sale of the books by private companies should be discussed and evaluated in the study.

3.2 Recommendations concerning the General Corporation for Schoolbook Printing Presses

3.2.1 Recommendations concerning the GC cooperation with the Ministry of Education as a customer

Objectiv 3.2.1

Content of project A : Production increase and stabilization

- o **The MoE should assure that at the start of the new school year (= September), the required quantities of schoolbooks for the following school year are known and that the corresponding print order is placed.**

The preliminary required quantities should represent an accuracy of 80 % of the maximal yearly required quantity. The final required quantities should be announced before February of the coming year.

This allows books to be produced continually and that the printing presses cannot give the late ordering as an excuse for late delivery.

Required measures to achieve the objective :

- o Determine the responsible people in the Ministry
- o Assess the present planning methods
- o Define instruments to improve the planning relative to the above mentioned objective
- o Consulting + training + support of the employees for the execution of tasks, up to 6 months

3.2.2 Recommendations concerning the GC general strategy to produce and distribute textbooks in three printing presses in Aden, Mukallah and Sanaa

Objectiv 3.2.2

Content of project A : Production increase and stabilization +

Content of project B : Restructuring of the GC and the printing presses

- o **Decentralisation of schoolbook production and distribution in three printing presses in Aden, Sanaa and Mukallah depending on the region.**
- o **Including administration, direct material supply to the printing presses, material stocking, book production and book delivery to the local area.**
- o **Project advantages:**
 - Reduced costs for transportation by direct supply of materials to the printing presses
 - Reduced costs for transportation for the book distribution
 - Increased responsibility at each printing press
 - Improved contact to the Governorates = customers
 - Cost comparison + competition between the printing presses would be possible
 - Less environment pollution + less traffic on the roads

Required measures to achieve the objective :

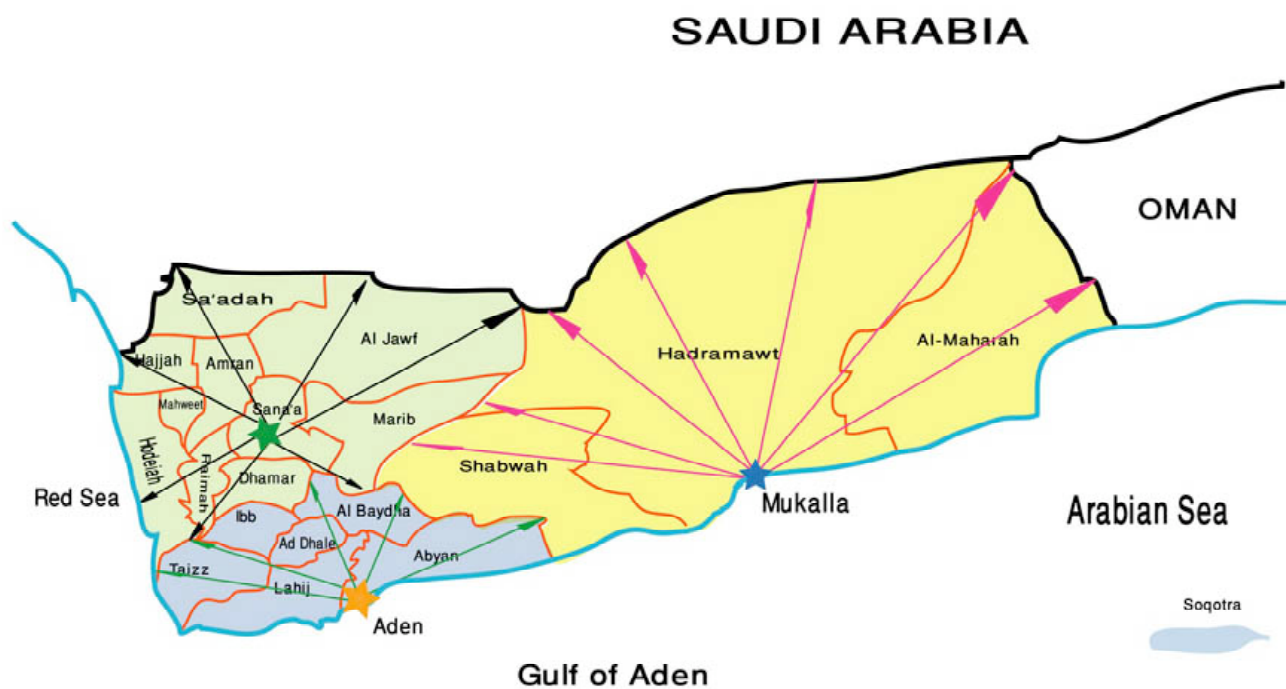
Content of project A : Production increase and stabilization

- o **Work out detailed study "decentralisation" with following contents**
 - Determination of the demand for schoolbooks per Governorate
 - Calculation of the production units per printing press
 - Appropriate assignment of the Governorates to the different printing presses
 - Optimise transportation routes
 - Calculation of the cost advantages relative to shorter transportation routes
 - Optimise the present and planned production possibilities and stocking facilities per printing press
 - Suggestions to supplement the existing production capacities to take advantage of local production and delivery.
 - Suggestions concerning the decentralisation of tasks and responsibilities from the GC to the printing presses

Content of project B : Restructuring of the GC and the printing presses

- o Application of the results in the GC and the printing presses

Sketch of local schoolbook production and distribution in three printing presses to optimise the transportation costs.



- o Local textbook production and delivery to warehouses reduces transportation costs.
- o There is an annual cost saving potential of approx. US \$ 200 000.- 400 000.-

Sketch of local material delivery – mainly paper - directly to the three printing presses



- o **Direct delivery to the printing presses from the nearest harbour reduces transportation costs**
- o **There is a annual cost saving potential of approx. US \$ 100 000.- - 150 000.-**

3.2.3 Recommendations concerning the organisation and management in the GC

Objectiv 3.2.3

Content of project B : Restructuring of the GC and the printing presses

- o **Decentralisation of administrative tasks from the GC administration to the individual printing presses in Aden and Mukallah.**

- o **Check the possibility of introducing a performance orientated employee remuneration in the printing presses and in the GC.**

The operative performance of the skilled workers in the production should be specially considered. The efforts and the performance of employees should be reflected in their income.

It should not be that each employee is paid an overtime premium, regardless if he has done overtime or not.

It should not be that the GC administration employees earn on average three times more than the production workers.

Required measures to achieve the objective :

- o **Decentralisation of administrative tasks:**

No further measures are required because this objective is included in the objective "Decentralisation" – see 3.2.2

- o **Check the possibility of performance orientated remuneration of the employees and establish it as much as possible**

- Define the job descriptions
- Specify categories in order to measure the performance of the employees + departments + printing presses
- Determine a performance orientated wage system taking into account the actual performances of the employees
- Introduction of this performance orientated wage system – in phases
- Consulting + training + support of the employees for the execution of tasks, up to 6 months

3.2.4 Recommendations concerning the necessary controlling instruments for the GC

Objectiv 3.2.4

Content of project A : Production increase and stabilization

- o **Introduction of a business-management controlling instrument that enables a cost and performance orientated management of all printing presses.**

The GC is presently managed with cost budgets and does not consider the production performance and the material consumption in comparison to the produced products.

Examples of important operating figures:

- Amount of waste paper + other relevant materials
- Cost-type and cost-unit accounting for the cost control of important cost pools
- Operating figures for cost-types and produced books (assessed according to book size), etc.

* The introduction of these controlling instruments will have important consequences on the cost situation at the printing presses – for this reason, this objective should be considered as short-term

Required measures to achieve the objective :

- o **Detailed concept + decision:**

- Determine the concept – type of instruments to be used + fact finding methods

- Check possible computer support – possible use of simple programmes

- o **Installation and supervision:**

- Install the proposed methods

- Train and support employees – discuss the informational value of the results.

- Prepare data and inform the GC Board of Administration and the MoE Minister – explain the necessary actions based on the received information.

- Introduce a quarterly reporting system

- Consulting + training + support of the employees for the execution of tasks, up to 12 months

3.3 Recommendations concerning the production and distribution of textbooks in the Aden-Manssoura printing press

3.3.1 Recommendations concerning the equipment and production process in the Aden-Manssoura printing press

Objectiv 3.3.

Content of project A : Production increase and stabilization

- o **Repair or overhaul** the pre-press equipment + printing machines + bookbinding equipment + print plate production equipment + transportation equipment + training for machine maintenance + operation
- o **Investment in pre-press + print plate equipment** urgently needed
- o **Repair building damage** – doors, windows, floors + air conditioning

Content of project B : Restructuring of the GC and the printing presses

- o **Expansion and coordination** of the production capacities*
- o **Expansion of storage capacities*** (only if the Aden-Mualla printing press is sold)

* Following the results of the detailed study "Decentralisation" – see point 3.2.2

Required measures to achieve the objective :

Content of project A : Production increase and stabilization

- o Realisation of **three preliminary studies with one expert per study to assess the need for repairs and the possibilities for an overhaul**. Results: cost calculation for spare parts + time needed for repair + training
 - digital pre press + print plate production*
 - printing machines – sheet fed offset – Heidelberg*
 - bookbinding equipment (binding + folding + cutting equipment)*

*cost optimization by coordination with the measures for the printing presses in Aden Mualla + Sanaa possible

- o Depending on the results of the preliminary studies – **Execution of the repairs + overhaul + trainings (optimising of the machine layouts is recommended).**
 - digital pre press + print plate production*
 - printing machines – sheet fed offset – Heidelberg*
 - bookbinding equipment (binding + folding + cutting equipment)*
 - * cost optimization by coordination with the measures for the printing presses in Aden-Mualla + Sanaa possible
 - o **Building repairs incl. air conditioning**
 - o **Small investments in digital pre press + plate production – important for quality improvement**
-

Content of project B : Restructuring of the GC and the printing presses

- o **Investments in new machines***
 - digital pre press + print plate production*
 - printing machines – sheet fed offset – Heidelberg*
 - bookbinding equipment (binding + folding + cutting equipment)*
 - investment in small machines + transportation equipment*
- o **Expansion of the storage capacities (only if the Aden-Mualla printing press is sold)***
 - * **The detailed statements can only be made when the results of the study “Decentralisation” are available and when the decision about the future of the Aden-Mualla printing press has been made.**

3.3.2 Recommendations concerning the technical management and skilled workers in the Aden-Manssoura printing press

Objectiv 3.3.2

Content of project A : Production increase and stabilization

o **Training of skilled workers operating the machines ***

- digital pre press + print plate production
- sheet fed offset machine
- bookbinding

Training fields: machine maintenance, machine make-ready, production

o **Training of mechanics ***

Training fields: machine maintenance, simple repairs

o **Training of technical management ***

The methods used for the technical organisation of print orders and the methods for the organisation and management of the production departments should be reorganized. Including training for successful application.

* Cost optimization by coordination of the measures with the same objectives for the printing presses in Aden-Mualla + Sanaa possible

Required measures to achieve the objective :

o **Training of skilled workers operating the machines**

- expert for digital pre press + print plate production
- expert for sheet fed offset machines
- expert for bookbinding (binding + folding + cutting)

o **Training of mechanics**

- during the machine repairs done by skilled mechanics – see 3.3.1

o **Training of technical management to install methods for order processing, organisation and production management**

- Training of shift supervisors, department leaders and employees for order processing –
Training fields: planning, processing and controlling print orders

3.3.3 Recommendations concerning the necessary controlling instruments for the Aden-Manssoura printing press

Objectiv 3.3.3

Content of project A : Production increase and stabilization

- o **The business management controlling instruments described in item 3.2.4 should be installed**

Required measures to achieve the objective :

Business management controlling instruments

- o Execution of these measures is already planned in the measures for objective 3.2.4

3.4 Recommendations concerning the general strategy for the Aden-Mualla printing press

Objectiv : 3.4

Content of project A : Production increase and stabilization

**The MoE should urgently decide what will be done with this printing press.
There are four options.**

It does not make sense to pay US \$ 80 000.- each month for wages and to create material costs that are approx. 50 % higher than necessary, and to receive almost no production for these expenses.

Required measures to achieve the objective :

In order to judge the following four strategies, the results of the study concerning the centralizing of the production – see item 3.3.2 - are needed.

**See
following four
alternatives for making a decision**

**incl. evaluation of the advantages and
disadvantages or risks**

without political
reflections !!

Alternative : A**The Aden-Mualla printing press is to be closed,**

The property, the machines and the buildings are to be sold –

The staff is to be dismissed and receives compensation

Evaluation**Advantages:**

- The GC does not have to pay monthly costs of US \$ 80 000.- without receiving the corresponding production.
- With the revenues from the sales, the employee compensations can be financed.
- With the remaining revenue, the GC could finance the possibly required investments for the expansion of the Aden-Manssoura printing press.
- No problems for the Aden-Mualla printing press staff to integrate into the Aden-Manssoura printing press.
- No consulting needed for training and reorganisation.

Disadvantages / Problems:

- 150 employees lose their income.
- If, within the decentralisation project, the Aden location needs to expand, new buildings need to be built in the Aden-Manssoura printing press

Alternative : B

The Aden-Mualla printing press is to be closed.

The property, the machines and the buildings are **not** sold

The staff is dismissed and receives compensation

Evaluation**Advantages:**

- The GC does not have to pay monthly costs of US \$ 80 000.- without receiving the corresponding production.
- The GC must finance the compensation.
- No problems for the Aden-Mualla printing press staff to integrate into the Aden-Manssoura printing press
- No consulting needed for training and reorganisation
- If, within the decentralisation project, the Aden location needs to expand, the Aden-Manssoura printing press could use the buildings + some equipment from the Aden-Mualla printing press.

Disadvantages / Problems:

- 150 employees lose their income.

Alternative : C**The Aden-Mualla printing press receives major support**

- a. The machines are repaired + staff trained
Budget: 515 000.- Euro
- b. Necessary short-term investments are made
Budget: 100 000.- Euro
- c. Building repair
Budget: 100 000.- Euro
- d. Consulting for reorganisation, incl. training
Budget: 75 000.- Euro
- e. New investments amounting to 2 - 4 Mio Euro for the print- and bookbinding- machines in the next years

and is integrated into the GC production planning.

The print press will be a

“self-dependent company”.

The company will produce and deliver schoolbooks in the Aden region in addition to the Aden Manssoura printing press.

**= own management
= own total responsibility
= own accounting**

The Aden-Mualla printing press must commit itself to operate successfully and on its own responsibility.

The printing press must commit itself not to hire additional people.

Evaluation**Advantages:**

- The GC has the opportunity to receive adequate production of textbooks for the US \$ 80 000.- monthly wage costs.
- No problems for the printing press Aden- Mualla staff and management to integrate into the Aden-Manssoura printing press.
- The Aden-Mualla printing press has the opportunity to be independently successful – the existing skilled workers could operate the machines.
- The Aden-Manssoura printing press could rent necessary storage area.
- If, within the decentralisation project, the Aden location needs to expand its capacities, the Aden-Mualla production capacities could be very useful.

Disadvantages / Problems:

- Risk, that the company will not perform as required
- Risk, that the company does not succeed in reorganizing

Conditions for a successful project:

- To ensure that this alternative is successful, all described measures (a – e) must be realized

Alternative : D	Evaluation
<p>The Aden-Mualla printing press receives major support</p> <p>a. The machines are repaired + staff trained Budget: 515 000.- Euro</p> <p>b. Necessary short-term investments are made Budget: 100 000.- Euro</p> <p>c. Building repair Budget: 100 000.- Euro</p> <p>d. Consulting for reorganisation, incl training Budget: 75 000 Euro</p> <p>e. New investments amounting to 2 - 4 Mio Euro for the print- and bookbinding- machines in the next years</p> <p>and is integrated into the GC production planning.</p> <p>The printing press will be integrated into</p> <p>the "Aden-Manssoura printing press and will produce and deliver school-books, managed by the Aden-Manssoura printing press.</p> <p>= without general management = without total responsibility = without accounting</p> <p>= only technical management by Aden-Mualla printing press</p>	<p>Advantages:</p> <ul style="list-style-type: none"> - The GC has the chance to receive adequate production of textbooks for the US \$ 80 000.- monthly wage costs. - No additional management for the Aden-Mualla printing press needed. - The Aden-Manssoura printing press can use the necessary storage area - If, within the project of decentralisation, the Aden location needs to expand its capacities, the Aden-Mualla production capacities could be very useful. <p>Disadvantages / Problems:</p> <ul style="list-style-type: none"> - Risk that the Aden-Manssoura management does not succeed with the reorganisation – possibly start with new management! - Major integration problems between the Aden-Mualla printing press management and employees and the Aden-Manssoura printing press are to be expected <p>Conditions for a successful project:</p> <ul style="list-style-type: none"> - To ensure that this alternative will be successful, all described measures (a – e) must be realised.

3.5 Recommendations concerning the production and distribution of textbooks in the Sanaa printing press

3.5.1 Recommendations concerning the equipment and production process in the Sanaa printing press

Objectiv 3.5.1

Content of project A : Production increase and stabilization

- o **Repair or overhaul** the pre-press equipment + printing machines + bookbinding-equipment + print plate production equipment + transportation equipment + training for machine maintenance and operation
- o **Investment in pre-press + print plate** equipment urgently needed
- o **Repair building damage** – doors, windows, floors

Content of project B : Restructuring of the GC and the printing presses

- o Expansion and coordination of the production capacities*
- o Expansion of storage capacities is not necessary !

* Following the results of the detailed study "Decentralisation" – see point 3.2.2

Required measures to achieve the objective :

Content of project A : Production increase and stabilization

- o Realisation of **four preliminary studies with one expert per study to assess the need for repairs and the possibilities for an overhaul**. Results: cost calculation for spare parts + time needed for repair + training measures for maintenance and operating
 - digital pre press + print plate production*
 - printing machines – sheet fed offset – Heidelberg*
 - printing machine – web offset – Compacta + Harris*
 - bookbinding equipment (binding + folding + cutting equipment)*

* cost optimisation by coordination with the measures for the printing presses in Aden - Mualla + Aden Manssoura possible

o **Depending on the results of the preliminary studies – Execution of the repairs or overhaul + trainings (optimisation of the machine layouts is recommended)**

- digital pre press + print plate production*
- printing machine – sheet fed offset – Heidelberg*
- printing machine – web offset – Compacta + Harris*
- bookbinding equipment (binding + folding + cutting equipment)*

* cost optimization by coordination with the measures for the Aden printing press possible

o **Building repair**

o **Small investments in digital pre press + plate production - important for quality improvement**

Content of project B : Restructuring of the GC and the printing presses

o **Investments in new machines***

- digital pre press + print plate production*
- printing machine – sheet fed offset – Heidelberg*
- printing machine - web offset
- bookbinding equipment (binding + folding + cutting equipment)*
- investment in small devices + transportation equipment

*** The detailed statements can only be made when the results of the study “Decentralisation” are available and when the decision about the future of the Aden-Mualla printing press has been made.**

3.5.2 Recommendations concerning the technical management and skilled workers in the Sanaa printing press

Objectiv 3.5.2

Content of project A : Production increase and stabilization

o **Training of skilled workers operating the machines***

- digital pre press + print plate production
- sheet fed offset machine
- bookbinding

Training fields: machine maintenance, machine make-ready, production

o **Training of mechanics***

Training fields: machine maintenance, simple repairs

o **Training of technical management***

The methods used for the technical organisation of print orders and the methods for the organisation and management of the production departments should be reorganized. Including training for successful application.

* Cost optimization by coordination of the measures with same objectives for the printing presses in Aden possible

Required measures to achieve the objective :

o **Training of skilled workers operating the machines**

- expert for digital pre press + print plate production
- expert for sheet fed offset machine
- expert for bookbinding (binding + folding + cutting)

o **Training of mechanics**

- during the machine repairs done by skilled mechanics – see 3.5.1

o **Training of technical management to install methods for order processing, organisation and production management**

Training of shift supervisors, department leaders and employees for order processing –
Training fields: planning, processing and controlling print orders

3.5.3 Recommendations concerning necessary controlling instruments for the Sanaa printing press

Objectiv 3.5.3

Content of project A : Production increase and stabilization

- o **The business management controlling methods described in item 3.2.4 should be installed**

Required measures to achieve the objective :

Business management controlling methods

- o Execution of these measures is already planned in the measures for objective 3.2.4

3.6 Summary of the recommended measures for the organisation units allocated to short-term, medium-term and long-term projects A + B + C

Detailed specification of inputs + cost estimate see annexes page 1 - 15

- o Project A : Production increase and stabilisation**
- time period: short term
 - completion should take place within approx. 18 months
- Objectives:**
- secure the existing production capacity by approx. 5 years
 - increase the existing GC production of approx. 40 % - 60 %
 - increase the existing production quality of approx. 100 %
 - realize the GC annual saving potential of approx. 1,0 Mio - 2 Mio €

MoE	3.1	Ministry of Education
MoE	3.1.2	Nomination of a project leader "supply of schoolbooks" within the MoE and development of instruments to be able to work with
GC	3.2	General Corporation for printing presses
GC	3.2.1	Nomination of personell responsible to work out the required number of textbooks within the MoE + development of a concept to be able to plan the required number of books at least 11 months before start of the next school year
GC	3.2.2	Work out a detailed study "decentralisation of schoolbook production and distribution in Yemen" + assess the strategy and the advantages and disadvantages
GC	3.2.4	Work out a concept for a controlling system to be able to manage the GC and the printing presses based on cost- and performance- oriented indicators + introduction to the GC and all printing presses - consulting + training
Aden I	3.3	Printing press: Aden - Manssoura
Aden I	3.3.1- a	Repair and reconditioning of the machines in Aden-Manssoura
	3.3.1- b	Repair on building and air conditioning

	3.3.1- c	Additional investments in equipment for the departements for digital pre press + print plate production
Aden I	3.3.2 - a	Training for operators in different production departements
	3.3.2 - b	Training for mechanics to maintain the equipment- included in project 3.3.1-a
	3.3.2 - c	Training in the fields of technical management and order handling departement
Aden I	3.3.3.	Training to implement the management controlling system - included in project 3.2.4
Aden II	3.4	Printing press: Aden - Mualla
Aden II	3.4.1- a	Repair and reconditioning of the machines in Aden-Mualla
	3.4.1- b	Repair on building and air conditioning
	3.4.1- c	Additional investments in equipment for the departements for digital pre press + print plate production
Aden II	3.4.2 - a	Training for operators in different production departements
	3.4.2 - b	Training for mechanics to maintain the equipment- included in project 3.3.1-a
	3.4.2 - c	Training in the fields of technical management and order handling departement
Aden II	3.4.3.	Training to implement the management controlling system - included in project 3.2.4
Aden II	o	Additional investments in equipment for the departements printing + bookbinding Remark : Without this investment the printing press will not become able to produce a adequate number of books in good quality.
Sanaa	3.5	Printing press: Sanaa
Sanaa	3.5.1- a	Repair and reconditioning of the machines in Aden-Mualla
	3.5.1- b	Repair on building and air conditioning
	3.5.1- c	Additional investments in equipment for the departements for digital pre press + print plate production
Sanaa	3.5.2 - a	Training for operators in different production departements
	3.5.2 - b	Training for mechanics to maintain the equipment- included in project 3.3.1-a
	3.5.2 - c	Training in the fields of technical management and order handling departement
Sanaa	3.5.3.	Training to implement the management controlling system - included in project 3.2.4

o **Project B : Restructuring of the GC and the printing presses**

- sustainable project
- time periode : medium term
- completion should take place within approx. 24 months

Objective:

- secure the production capacity for approx.10 years

GC	3.2	General Corporation for printing presses
GC	3.2.2	Realisation of the project "decentralisation of production and distribution of textbooks" - most of these objectives could be implemented during the measures of the production stability projects - short term
GC	3.2.3 - a	Decentralisation of administration-tasks from the GC to the printing presses - this objective is connected to the decentralisation project !
	3.2.3 - b	Evaluation of possibilities to pay salaries based on performance- + productivity- + company results - work out recommendations concerning salary scales
Aden I	3.3	Printing press: Aden - Manssoura
Aden I	3.3.1 - a	Additional investment in new equipment for the printing press Aden - Manssoura * * depending on the results of the study "decentralisation "
	3.3.1 - b	Additional investment in storage capacity of the printing press Aden - Manssoura * * depending on the results of the study "decentralisation"
Sanaa	3.5	Printing press: Sanaa
Sanaa	3.5.1	Additional investment in new equipment for the printing press Sanaa * depending on the results of the study "decentralisation"

- o Project C : Move towards privatisation**
- sustainable Project
 - time periode - long term
 - completion should take place within approx. 48 months

Objective:

- Prepare and analyse the privatisation possibilities for the textbook supply

MoE	3.1	Ministry of Eudcation
MoE	3.1.1	Training of printing experts at the Ministry of Education, to give them the specialised knowledge to be able to tender and to purchase part of the text book production in the private printing industry.
MoE	3.1.3- a	Check the legal possibilities to replace the existing financing of the GC by an order relating financing - work out proposals how the pricing of the GC should be structured and how the financing / the payment through the Ministry of Finance should be made
	3.1.3- b	Check if the the Ministry of Finance can provide the printing presses with one-time funds so that that the cost advantages of large quantities of paper orders can be used
	3.1.3- c	Work out an offer and price comparison for received offers to produce textbooks in the private industry - analyse the differences and see whether the GC printing presses are competitive to the private sector
MoE	3.1.4	Work out a detailed study which analyses the possibilities of selling textbooks through the private sector at a subsidised price - would this improve the b ook supply for pupils? Compare and discuss advantages and disadvantages in comparison to the existing situation

4. Summary of recommendations concerning cost savings potentials

- The following statements cannot be documented with corresponding actual data. The reason for this is that the GC has no sufficient business management data available.

The described saving potentials are based upon practical experience and discussions and after the visits to the production and storage areas at each printing press.

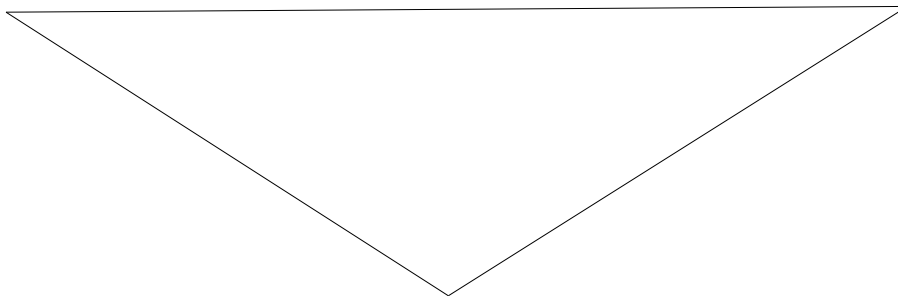
It is presently not important if the estimated figures are 30 % or 50 % too high. Even if only 50 % of the saving potentials were realized, this would represent enough money to repair all machines and purchase spare parts.

- **Summary: the GC has a yearly savings potential of US \$ 1,0 – 2,0 Mio**

Only the introduction of correct controlling methods and data

- which relate the material costs to the achieved production performance (related to number of pages and size of the books)
- which relate the company costs to the performance of the individual printing presses
- which allow a statement about costs and productivity of individual performance units such as repairs, transportation, administration, production fields

makes it possible to record, assess and realise the following saving potentials:



- The number of employees in the **Aden-Manssoura** and **Sanaa** printing presses and especially in the **GC administration** can be reduced in the medium-term by 10 – 20 %.

Because of poor machine performance, many employees were hired to work in the third shift. After the machine repairs, an increase of the machine performance by approx. 50 – 100 % can be expected. A third shift is no longer necessary.

This way guarantees furthermore that only well trained workers operate the machines and assure their correct maintenance.

Detailed data is only available after compiling a **detailed staff requirements plan**. It is recommended to stop hiring and to **reduce the staff** in the medium-term.

There are now approx. 680 employees at the GC without Aden-Mualla, this means approx. 70 – 130 employees x US \$ 400.- monthly average costs = **yearly saving potential approx. US \$. 300 000.- - 500 000.-**

- To the above savings 150 employees at the **Aden-Mualla** printing press can be added. They have been paid since 2004 although the company does not contribute adequate schoolbook production. These wage costs amount to US \$ 1 000 000.- annually.

If the printing press is supported accordingly and delivers a "normal production" in the medium-term, the personnel costs can be reduced at a other printing press. This results in **a medium-term saving potential of approx. US \$ 200 000.- - 500 000.- per year.**

"This printing press can and must – after being equipped with new machines – cover its own personnel costs with the production and sale of schoolbooks to the MoE!"

- Presently, there is no reliable data available about the **waste paper within the printing presses**. It must be estimated at approx. 15 % of the amount of paper Purchased.

As the GC printing press production is very simple, this waste should not be higher than 5 – 8 % = reference data from private printing presses.

A annual paper purchases amount to approx. US \$ 12 Mio. Reducing the waste paper costs for stocking, transportation and production process by approx. 5 % would mean a **saving potential of US \$ 500 000.- and 600 000 per year.** It could probably be even higher.

As a result of the Mualla printing press receiving the incorrect paper size from the GC, material costs are approx. twice as high as in the other printing presses.

- **Saving potential through the decentralisation project:
"Direct material supply to the printing presses"**

The material transportation from the Hodeida harbour to Sanaa and from there to the printing presses causes supplementary costs which would not occur if the printing presses were supplied directly.

**The yearly saving potential is estimated at:
US \$. 100 000.- and 150 000.-**

- **Saving potential through the decentralisation project:
"Schoolbook delivery to the area near to the printing presses"**

No figures are presently available, showing the total costs for schoolbook transportation from the printing presses to the Governorates.

Through the realisation of the concept for the decentralised production and elivery of schoolbooks, the printing presses would save approx. 50 % of these costs.

**The yearly saving potential is estimated at:
US \$. 200 000.- and 400 000.-**

- **Remarks about the decentralisation project:**

- The Aden-Manssoura and Aden-Mualla printing presses have sufficient storage capacities to realise the decentralisation project.
- The exact cost advantages can only be calculated after execution of the detailed study – see item 3.2.2

SUMMARY OF POTENTIAL ANNUAL COST SAVINGS :

Cost items	per year in million		remarks
	low	high	
o Paper	0,5 Mio	0,6 Mio	as a result of waste paper reduction
o Transportation costs for distribution of textbooks + delivery of material	0,3 Mio	0,55 Mio	as a result of the decentralisation project
o Personnel in Aden Manssura + Sanaa + GC administration	0,3 Mio	0,5 Mio	by reducing number of personell
o Personnel in Aden Mualla	0,2 Mio	0,5 Mio	depending on savings of personell in other printing - possible because Aden Mualla is going to produce a high number of schoolbooks and therefore less production and personell is required in other printing presses
	1,3 Mio	2,15 Mio	

5. Specification of inputs and cost estimate

see Annex B.II